

[Extracted from the volume of "Annual Departmental Reports (Abridged)" for the period 1923-1924.]



UNION OF SOUTH AFRICA

---

# DEPARTMENT OF PUBLIC HEALTH

---

## REPORT FOR THE YEAR ENDED 30th JUNE,

### 1923

BY

**Dr. J. A. MITCHELL,**

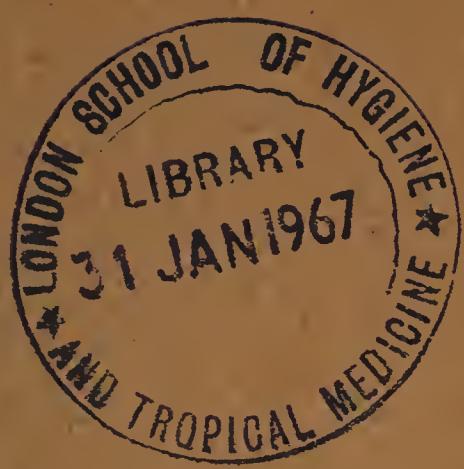
*Secretary for Public Health and Chief Health Officer*

---

PRETORIA

THE GOVERNMENT PRINTING AND STATIONERY OFFICE

1924



## TABLE OF CONTENTS.

---

<b>I. Introductory—</b>	Page	Page	
1. General Remarks.....	3	8. Sleeping Sickness.....	20
2. Staff.....	3	9. Smallpox and Vaccination.....	20
3. Council of Public Health.....	4	10. Tuberculosis.....	22
4. District Surgeons.....	4	11. Typhus.....	23
5. Local Authorities and their Health Staffs.....	4	12. Venereal Diseases.....	24
6. Parliamentary Session, 1923.....	5	<b>IV. General—</b>	
7. Capital Expenditure.....	5	1. Housing.....	26
<b>II. Work of the Department—</b>		2. Town Planning.....	27
1. Inspections, Investigations, and “Field” Work.....	6	3. Nursing and Maternity Homes	28
2. Addresses and Published Papers by Members of the Staff...	7	4. Child Welfare.....	29
3. Publicity and Educative Work	7	5. Offensive Trades.....	30
4. Mines of the Rand Area.....	8	6. Opium and Habit-forming Drugs.....	30
5. Natal Coal Mines and Sugar Estates.....	9	7. Traffic in Methylated Spirits for Drinking Purposes.....	32
6. Leprosy.....	10	8. Poisoning by “Stinkbiaar” or Thorn Apple.....	33
7. Laboratories.....	11	9. Botulism and other forms of “Food Poisoning”.....	33
8. Port Health Administration...	13	10. Ankylostomiasis or Hookworm Disease.....	34
9. Adulteration of Food and Drugs	14	11. Cancer.....	34
<b>III. Infectious, Communicable, and Pre- ventable Diseases—</b>		12. Vaccines, Sera, Pathogenic Cul- tures, etc.....	35
1. Notifications.....	14	13. Exclusion of Children from School on Account of In- fectious Disease.....	35
2. Anthrax.....	15	14. Medical, Dental, and Pharmacy Matters.....	36
3. Enteric or Typhoid Fever.....	15	15. Military Hospitals and Medical Services.....	37
4. Influenza.....	16	16. Central Medical and Veterinary Stores.....	38
5. Malaria.....	16	17. Military Pensions Medical Work	38
6. Plague.....	18	18. Artificial Limb Factory.....	39
7. Rabies (Hydrophobia).....	20		



# Department of Public Health.

---

REPORT FOR THE YEAR ENDED 30TH JUNE, 1923.

By DR. J. A. MITCHELL,  
Secretary for Public Health and Chief Health Officer.

---

## I.—INTRODUCTORY.

1. *General Remarks.*—The period covered by this report has been one of severe and continued financial stringency, which has affected this Department in common with all other spheres of Government activity. Progress in matters involving increased expenditure has of necessity been restricted, curtailments and economies have been effected wherever possible, and every effort has been made to expend to the best advantage the funds available.

The financial stringency has also, in varying degree, affected sanitation and public health measures in most centres throughout the Union. Many local authorities have reduced their public health and sanitary staffs or have restricted their health expenditure in other directions. In a number of instances, municipalities which previously had in operation a departmental system of night-soil and refuse removal, with duplicate night-soil pails, have fallen back on the old and unsatisfactory contract system, carried out with tank-carts and single pails, which, in the nature of things, are never properly cleansed or disinfected. These and similar retrograde movements are likely to have a definitely prejudicial effect on the public health of the urban population of the Union. It is a regrettable fact that in bad times expenditure and activities in connection with public health and sanitation are usually amongst the first to be restricted.

2. *Staff.*—The principal changes during the year were the retirement on superannuation of Dr. P. Targett Adams, Assistant Health Officer, on 5th April, 1923, and the transfer of the headquarters of Dr. Sheldon, Assistant Health Officer, from East London to Pretoria, on 1st January, 1923. Dr. Sheldon was first appointed Assistant Health Officer in 1920, with headquarters at East London. His duties were mainly itinerant, most of his time being spent in the Transkei in connection with typhus. Experience has shown that for inspecting health officers the best plan is to fix their headquarters at Pretoria, so that their services are readily available wherever required in the Union, and that they are always in direct touch—these advantages far outweighing the drawback of the time spent on journeys from and to Pretoria.

The question of the organization of chemical laboratories and the correlation of all chemical work undertaken by Government departments has been before the Government for a number of years past, and has been considered by various Commissions. It was reinvestigated in November, 1922, by a special committee appointed by the Public Service Commission. Subsequently, after a conference between the Public Service Commission, the Secretary for Agriculture, and myself, the Government decided to centralize in the Department of Agriculture the administration of all Government chemical work. The administration of

the Chemical Laboratories at Johannesburg and Cape Town, hitherto carried out by this Department, was accordingly transferred to the Department of Agriculture on 1st May last, it being arranged that in regard to medico-legal and other work having both chemical and medical aspects, the staffs of the Chemical and Pathological Laboratories would continue to work in close touch and co-operation.

The staff and organization of the Department were inspected and reported on by the Public Service Commission in January and February, 1923. The Commission recommended that the post of Medical Inspector, with headquarters in Johannesburg, be abolished, the work in future to be carried out by officers from the head office; it also recommended various other staff changes and reductions, mostly of a minor nature. The Commission's inspector concludes his report by remarking that, subject to the observations contained in it, "he found the Department, generally speaking, well organized on sound economical lines, with the Secretary pressing for efficiency on the part of his officers." The Commission's recommendations either have already been or are at present in process of being carried out, subject to certain modifications mutually agreed upon.

3. *Council of Public Health.*—During the year Mrs. Annie Botha resigned from the Council and was replaced by Miss Mabel Elliott. No meeting of the Council was held during the year.

4. *District Surgeons.*—The new *partially commuted* system continues to work satisfactorily. The following table shows the position as at 30th June, 1923. The six whole-time district surgeons are those at Cape Town, Wynberg, Port Elizabeth, East London, Durban, and Pretoria District; the five whole-time officers appointed jointly with local authorities or public bodies are those at Queenstown, Kimberley, Grahamstown, Hartebeestpoort, and Pretoria Central.

TABLE A.—APPOINTMENT OF DISTRICT SURGEONS AS ON 30TH JUNE, 1923.

Province.	Whole-time.	Whole-time, but jointly with Local Authority or Public Body.	Part-time.				Total.
			On Annual Retainer and Fees.	On Commuted Salary and Allowances.	On Commuted Salary with Certain Supplementary Fees and Allowances.		
Cape.....	4	3	13	2	118		140
Natal.....	1	—	12	—	26		39
Transvaal...	1	2	10	9	34		56
O.F.S.....	—	—	5	—	38		43
UNION....	6	5	40	11	216		278

5. *Local Authorities and their Health Staffs.*—Table B shows the local authorities under the *Public Health Act* as on 30th June, 1923. Eight municipalities have whole-time Medical Officers of Health, namely, Bloemfontein, Cape Town, Durban, East London, Johannesburg, Pietermaritzburg, Port Elizabeth, and Pretoria. In April, 1923, the Administrator of Natal, in his capacity as Local Authority for the "Peri-Durban" area under section 8 of the *Public Health Act*, appointed a whole-time Medical Officer of Health for that area.

TABLE B.—LOCAL AUTHORITIES UNDER THE PUBLIC HEALTH ACT (1919),  
AS ON 30TH JUNE, 1923.

Province.	Municipalities.	Village Management Boards.	Local Boards.	Village Councils.	Health Committees.	Magistrates.	Divi- sional Councils.	Board of Health.	Adminis- trator.	Total.
Cape.....	129	81	15	—	—	29	89	1	—	344
Natal.....	9	—	15	—	—	44	—	—	1	69
Transvaal..	22	—	—	29	23	35	—	—	—	109
O.F.S.....	55	7	—	—	—	32	—	—	—	94
UNION...	215	88	30	29	23	140	89	1	1	616

On 30th June, 1923, there were 45 local authorities, namely, 20 in the Cape, 5 in Natal, 7 in the Orange Free State, and 13 in the Transvaal, employing certificated sanitary inspectors devoting the whole of their time to sanitary work—an increase of 5 on the previous year.

6. *Parliamentary Session, 1923: Matters affecting Health Department.*—The Minister of Public Health introduced the following Bills:—

*Rand Water Board Statutes Amendment Bill*, passed as Act No. 18 of 1923—a short measure designed to reduce clerical work and expenditure in connection with the preparation of lists of mining claims for the purpose of assessing water charges.

*Medical, Dental, and Pharmacy Bill*—a comprehensive consolidating and amending measure, which passed Second Reading and was reported on by a Select Committee of the House of Assembly.

*A Public Health Amendment Bill*, designed to provide for the exemption of conscientious objectors to vaccination, was introduced to the House of Assembly by a private Member, and passed Second Reading; its essential clauses were, however, rejected during the Committee stage, and the Bill was not further proceeded with.

The following Acts passed during the Session are of special interest to this Department: *Births, Deaths, and Marriages Registration Act*, No. 17 of 1923; *Natives (Urban Areas) Act*, No. 21 of 1923; *Customs and Excise Duties Amendment Act*, No. 23 of 1923 (re taxation of patent or proprietary medicines).

7. *Capital Expenditure on Public Health Schemes.*—The following schemes, in respect of which the part-refunds mentioned were paid out of the Department's Loan Votes, were carried out during the year: Pretoria Municipality, Infectious Diseases Hospital extension (13 additional beds), £1,534; Pietermaritzburg Municipality, Infectious Diseases Hospital extension (8 additional beds), £643; Barberton Municipality, 2 small wood and iron buildings for V.D. cases, £111; Port St. Johns, 3 V.D. huts, £80 (total cost paid by Government); Cape Town Municipality, 5 "Nissen" huts for tuberculosis cases in grounds of Infectious Diseases Hospital, £84.

Provision for the following was made on the Loan Estimates, 1923-24: quarantine station, Rentzkie's Farm, Cape Town (to be administered in conjunction with Municipal Smallpox Hospital), £16,800; pont for Clayton fumigating plant, Port of Table Bay, £3,200; Rietfontein Hospital, Johannesburg, new smallpox block, reconstruction of V.D. wards, staff quarters, drainage, water supply, etc., £14,920; Nelspoort Tuberculosis Sanatorium, £27,000 (being balance of total vote of £53,000); Cape Town Infectious Diseases Hospital extension scheme, £10,000; other infectious diseases and venereal diseases hospitals, £3,000; South African Institute for Medical Research, new wing, £5,000 (being first instalment of a total vote of £20,000); Housing Loans Fund (under Act No. 35 of 1920), £700,000, of which £433,000 was a re-vote of money voted during the previous year, but not spent, £80,000 was for coloured and native housing, and £187,000 was for European (and, in special cases, coloured) housing, being a first instalment of an amount of £1,000,000, to be spread over three years.

## II.—WORK OF THE DEPARTMENT.

1. *Inspections, Investigations, and "Field" Work.*—The following table summarizes the inspections and investigations carried out by each administrative and inspecting Medical Officer of the Department during the year. A large amount of "field" work of an executive nature was carried out in connection with typhus.

TABLE C.—INSPECTIONS AND INVESTIGATIONS BY MEDICAL OFFICERS OF THE DEPARTMENT OF PUBLIC HEALTH, YEAR ENDED 30TH JUNE, 1923.

Particulars.	J. A. Mitchell.	Sir E. N. Thornton.	L. G. Haydon.	G. A. P. Ross.	F. C. Willmot.†	P. Targett Adams.‡	H. F. Sheldon.	S. van Niekerk.	P. Allan.	Total.	
Systematic General Inspection.....	— 5	— 1	— 1	— 1	6	— 1	— 3	11	— 1	13	38
Mines.....	— 1	— 1	— 1	— 1	13	— 1	— 3	— 1	163	— 3	177
Factories and works*....	— 1	— 1	— 1	— 1	43	— 1	— 3	22	— 3	71	
General and Chronic Sick Hospitals, etc., under Provincial Administration.....	2	14	— 1	— 1	5	6	— 1	10	— 1	3	40
Mental and Leper Institutions.....	1	— 1	— 1	— 1	10	— 1	— 1	— 1	— 1	3	14
Venereal Hospitals, Prisons, Reformatories, etc.....	18	— 1	— 1	— 1	16	— 1	— 1	— 1	— 1	3	43
Water Supplies.....	3	— 1	— 1	— 1	7	— 1	— 1	2	— 1	1	15
Drainage and Sewerage..	1	— 1	— 1	— 1	12	— 1	— 1	1	— 1	1	15
Housing, Nuisances, and Insanitary Conditions..	10	— 4	— 4	— 4	14	— 1	— 1	— 1	— 1	— 1	32
Departmental Inquiries..	— 1	— 1	— 1	— 1	— 1	— 1	— 1	— 1	— 1	— 1	1
Formidable Epidemic Diseases.....	3	— 1	— 1	— 1	4	— 1	— 1	2	9	— 1	19
Other Infectious or Communicable Diseases....	13	— 1	— 1	— 1	26	— 1	— 1	14	— 1	— 1	54
Other Inspections, etc....	6	16	10	82	— 6	— 3	— 2	— 75	— 24	— 24	200
Total No. of Inspections, etc.	62	34	17	238	15	10	50	269	24	719	
No. of Days Absent in that connection.....	60	34	18	139	56	17	280	365	219	— 1,188	
Miles Travelled (Rail)....	5,566	3,200	1,200	2,394	4,650	1,185	2,000	—	3,500	23,695	
Miles Travelled (Road)...	1,558	960	90	4,473	450	30	7,000	2,906	2,000	19,467	

\* Including Offensive Trades.

† On leave 21/3/22 to 20/9/22.

‡ Retired on Superannuation, 5/4/23.

**2. Addresses and Published Papers by Members of the Staff.—**

*Dr. J. A. Mitchell, Secretary for Public Health and Chief Health Officer :*

- “ The Public Ill-health.” S.A. Medical Congress, Johannesburg, 20th September, 1922. (*S.A. Medical Journal*, October, 1922, Vol. XVIII.)
- “ Small-pox and ‘Amaas’ in South Africa.” (*Lancet*, Vol. II, 14th October, 1922.)
- “ Public Health Problems of Local Authorities.” Orange Free State Municipal Association, Bloemfontein, 18th October, 1922.
- “ The Scope, Objects, and Methods of Public Health.” Pretoria Athenaeum Society, 24th January, 1923.
- “ Venereal Disease in the Union.” Society for Combating Venereal Disease, Cape Town, 22nd May, 1923.

*Dr. L. G. Haydon, Assistant Health Officer :*

- “ Plague Prevention—Recent Observations on the Small Wild Animals of the Orange Free State.” S.A. Medical Congress, Johannesburg, September, 1922.

*Dr. G. A. Park Ross, Assistant Health Officer, Durban :*

- “ Control of Malaria in the Union.” (*S.A. Medical Record*, No. 23, Vol. XX, 9th December, 1923; *S.A. Medical Journal*, No. 6, Vol. XVIII, January, 1923.)

*Dr. H. E. Fernandez, Port Health Officer, Port Natal :*

- “ Notes from the Diary of a Prison Doctor.” (*S.A. Medical Journal*, No. 11 Vol. XVIII, June, 1923.)

*Dr. W. A. Murray, Government Pathologist, Durban :*

- “ The Interpretation of the Wassermann Test.” (*S.A. Medical Record*, Vol. XX, 26th August, 1922.)

*Dr. H. A. Spencer, District Surgeon, Middelburg, Transvaal :*

- “ Malaria as it Occurs upon the Middleveld of the Transvaal.” (*S.A. Medical Record*, No. 18, Vol. XX, 23rd September, 1922.)
- “ Malaria in the Lowveld.” (*S.A. Medical Record*, No. 1, Vol. XXI, 13th January, 1923.)
- “ The Treatment and Prevention of Malaria.” (*S.A. Medical Record*, No. 4, Vol. XXI, 24th February, 1923.)

*Dr. Joseph J. Levin, District Surgeon, Central Area, Johannesburg :*

- “ A Case of Haemo-Pericardium Successfully Operated Upon.” (*S.A. Medical Journal*, No. 2, Vol. XVIII, 19th September, 1922.)
- “ An Analysis of 4,656 Post-mortem Examinations held at the Government Mortuary, Johannesburg.” (*S.A. Medical Journal*, No. 5, Vol. XVIII, 19th December, 1922.)

*J. Lewis, M.A., B.Sc., Government Analyst, Johannesburg :*

- “ Some Observations on South African Toxicology.” (*S.A. Medical Record*, 23rd September, 1922.)

**3. Publicity and Educative Work.—**The following pamphlets and leaflets were prepared, published, and distributed by the Department during the year:—

*Venereal Diseases :*

- Their Prevention and Treatment. (In English and Dutch.) No. 248 (Health).
- Instructions to Patients Suffering from Gonorrhoea. (In English and Dutch.) No. 249 (Health).
- Instructions to Patients Suffering from Syphilis. (In English and Dutch.) No. 250 (Health).
- Instructions to Native Patients Suffering from Syphilis or Gonorrhoea. (In English and four native languages).

*Datura stramonium* or *Datura tatula*—Poisoning by “Stinkblaar,” or Thorn Apple. No. 256 (Health).

*Typhus* or “Louse Fever”—Memorandum for Guidance of Disinfestors, Sanitary Inspectors, and others engaged in “Field” Work. No. 258 (Health).

4. *Mines of the Rand Area.*—The following table shows the death-rate and principal causes of death in natives on the mines of the Rand area during the past year, the corresponding rates from 1919 being given for purposes of comparison:—

TABLE D.—DEATH-RATE AND PRINCIPAL CAUSES OF DEATH OF NATIVES ON THE MINES OF THE RAND AREA, 1919 TO 1923.

Disease.	1919.		1920.		1921.		1922. Jan.-June.		1922-23.	
	Total.	Rate per 1,000 per Annum.	Total.	Rate per 1,000 per Annum.	Total.	Rate per 1,000 per Annum.	Total.	Rate per 1,000 per Annum.	Total.	Rate per 1,000 per Annum.
Pneumonia.....	525	2.64	449	2.19	513	2.56	144	1.52	451	2.02
Pulmonary Tuberculosis.	343	1.73	451	2.21	307	1.53	103	1.08	203	0.91
Other respiratory diseases (except Miners' Phthisis)	101	0.51	110	0.54	140	0.71	23	0.26	67	0.31
Enteric Fever.....	86	0.43	115	0.55	102	0.50	100	1.08	208	0.92
Dysentery.....	84	0.41	90	0.43	55	0.27	45	0.50	105	0.46
Scurvy.....	20	0.11	54	0.25	28	0.14	4	0.04	11	0.04
Influenza.....	743	3.72	817	4.17	564	2.84	217	2.28	316	1.43
All other diseases.....	925	4.66	1,162	5.67	774	3.87	374	4.00	1,015	4.60
 TOTAL.....	 2,827	 14.21	 3,248	 16.01	 2,483	 12.42	 1,010	 10.76	 2,376	 10.69

Plans for the following new buildings were passed during the year: native hospital, New State Areas Gold Mine; native compounds, Randfontein Central Gold Mine and Boksburg Brickworks; extensions of native compounds, Modderfontein Dynamite Works, New State Areas Gold Mine, Geduld Proprietary Mines, Battery Reef (Randfontein), Government Gold Mine Areas, West Springs Mine, and Robinson Deep Gold Mine.

The arrangements for mine natives in the Rand area, in respect of accommodation, feeding, medical attendance, and hospital accommodation, may be described generally as excellent. The revised diet scales for natives, introduced in 1921, have reduced cases of scurvy to about one-quarter of what they were previously; no death from scurvy occurred during the year amongst natives on the mines. The increasing use of concrete instead of wooden bunks, and improved methods of cleansing and whitewashing compounds and dealing with garbage and refuse, have had beneficial effects. Septicaemia following injuries has been greatly reduced as a result of the more efficient arrangements for securing prompt and suitable "first-aid" dressing. Excellent work has been done by the Transvaal Red Cross Society in organizing classes and promoting competitions in "first-aid" for native "boss boys" and others.

Tuberculosis is the most serious health problem remaining unsolved in connection with mine natives. A conference of representatives of the Witwatersrand Native Labour Association, the Native Recruiting Corporation, Native Affairs Department, Mines Medical Officers' Association, South African Institute for Medical Research, and this Department—convened at the request of the Minister of Public Health, and presided over by me—took place on 31st October, 1922. The conference was merely of a preliminary nature, to discuss the general question and lines of investigation. Its general feeling was that the problem is of great and urgent importance from the points of view both of the native labour supply and the public health of the Union; that its

most hopeful line of attack is laboratory research, closely linked up with clinical investigation and "field" inquiries; that the laboratory work could best be done at the South African Institute for Medical Research by a specially selected officer; and that the clinical and "field" work should be carried out or co-ordinated by a medical officer with special experience and training. It is known that tuberculosis is seriously prevalent among the natives in many districts of the Eastern Cape Province and Transkei, from which many go to the mines; that at least in certain native areas the disease is increasing; that the South African native and half-breed is highly susceptible to tubercular infection; that some tribes—such as the Bechuana—are more susceptible than others; and that the disease in natives is often of acute type (general tuberculosis or acute phthisis), which ends fatally in a high percentage of cases. Amongst the matters urgently calling for investigation are the causes of the high susceptibility and predominantly acute type of the disease in natives; the relative susceptibility of various tribes and of natives of various ages; the respective prevalence amongst natives of tuberculosis of human and bovine types; the usual or most frequent age, place, and mode of infection; the existence of latent infection amongst native mine labourers on first recruitment; and the rôle played by the returned tubercular mine native labourer, as regards spread of the infection amongst his family and "contacts." A considerable percentage of apparently healthy natives have localized "râles," or "crepitations," in the marginal areas of their lungs. The significance of this condition is at present unknown, and it is doubtful whether or not it is an indication of tuberculosis; in any case, it is the cause of rejection of a considerable percentage of otherwise fit native labour recruits, and in the interests mainly of the native labour supply it urgently requires investigation.

The Director of the South African Institute for Medical Research considered that for the investigation of these problems an expert bacteriologist, with special experience in this class of work, would be required for three or four years, together with a medical officer for clinical and "field" work, and certain supplementary staff; also, that without additional accommodation and considerable additional funds it would be impossible for the Institute to undertake the work. Under the circumstances there was no alternative but to postpone the general investigation of the problem; but in April last it was found possible to second Dr. Peter Allan, Medical Inspector in the Department, to the Institute for a period of three or four months, to investigate the problem of marginal "râles," or "crepitations." This investigation was still in progress on 30th June, 1923.

5. *Natal Coal Mines and Sugar Estates.*—A large number of inspections and investigations in connection with health and sanitary matters on the Natal coal mines and sugar estates were made during the year—many of them in conjunction with officers of the Department of Native Affairs. Following on representations made by this Department, the Department of Native Affairs appointed a committee of inquiry—consisting of two of its officers, with Dr. Park Ross, Assistant Health Officer—to investigate mortality at Izingolweni amongst natives returning home from work on sugar estates. This inquiry disclosed grave defects in the general arrangements for dealing with native labourers on certain sugar estates. Energetic measures have been taken to remedy these defects and to prevent a recurrence of the state of matters which led to the inquiry.

A serious prevalence of malaria occurred during the year on certain estates in Zululand, especially in native labourers recruited from Pondoland and other non-malarial areas. Representations were made to the Department of Native Affairs urging the prohibition or restriction of recruitment of natives from

non-malarial areas for employment in malarial areas, and also urging extension of the Transvaal Native Labour Laws to Natal, with such modifications as local circumstances might render necessary. Although many improvements have been effected during the past two or three years, the position as regards sanitation and public health of natives and Indians on the coal mines and sugar estates of Natal and Zululand is still far from satisfactory in certain respects. The Public Health Act and regulations thereunder are inadequate to secure all the improvements which are necessary. The Act provides no powers under which employers of native or Indian labour can be required to provide sanitary conveniences of approved or specified pattern, kitchens, washing-places, hospital accommodation and medical attendance, and, most important of all, proper rationing. Certain powers to deal with these matters exist in Act No. 43 of 1899 (Natal), but for the effective remedying of the conditions referred to, in the view of this Department, provisions similar to those of the Transvaal Native Labour Laws [Ordinance No. 32 of 1905 (Transvaal), and Act No. 15 of 1911] are necessary.

6. *Leprosy*.—The leper institutions and all matters relating to leprosy have hitherto been administered by the Department of the Interior. During examination by the Cabinet Finance Committee in October last, I called attention to my evidence on the subject before the Select Committee of the House of Assembly on the Treatment of Lepers (S.C. 10) in 1918, and submitted that the present annual expenditure on this disease is out of all proportion both to its importance as a cause of illness and death in the Union, and to present expenditure on diseases such as tuberculosis and syphilis, which are of far greater public health importance ; that the leper institutions had gradually accumulated a large number of old-standing chronic cases, in which infectivity was now absent or negligible ; that a competent medical board should be appointed to examine all patients under institutional segregation, and to classify them as to infectivity and the necessity for continued segregation on public health grounds ; that the methods of dealing with leprosy required to be brought into line with modern knowledge of the disease ; that the problems of the disease, including prevalence, mode of spread, circumstances favouring infection, methods of dealing with cases, and methods of treatment, should be investigated on organized lines with the assistance of a Research Committee, on which the S.A. Institute for Medical Research and the two University Medical Schools should be represented ; that a new Leprosy Act for the Union was required ; that steps should be taken to obtain the co-operation of local authorities in dealing with the disease, and that the administration of the leper institutions and all leprosy matters should be transferred to the Health Department, it being in the best position to carry out the measures and reorganization suggested.

These proposals were subsequently considered and endorsed by a conference presided over by the Chairman of the Public Service Commission, and comprising the Secretary for the Interior, the Commissioner for Mentally Disordered Persons (in his capacity as Medical Inspector of Leper Institutions), and myself, and were thereafter approved by the Government, which further decided that the transfer should take place on 1st April, 1924, and that in the meantime this Department should arrange for the examination of all segregated patients by a Leprosy Board, the Department of the Interior continuing the routine administration of the leper institutions, the two Departments to act in close touch and co-operation.

In January last a Leprosy Board was appointed accordingly, consisting of Dr. Willmot, Assistant Health Officer, as Chairman, Dr. Robertson, Government Pathologist at Cape Town, as the second official member, and two non-official members in respect of each institution, these being prominent medical

men with special knowledge and experience of leprosy. The Board's terms of reference were to carry out a careful examination, both clinical and bacteriological, of all leper patients in Government institutions, and to classify them in accordance with a specified system on the basis of the type of the disease, their infectivity, and the necessity or otherwise for their continued isolation on public health grounds.

The Board completed its duties during the succeeding two months. The following table summarizes the results:—

TABLE E.—LEPROSY BOARD: RESULTS OF EXAMINATION OF PATIENTS IN LEPER INSTITUTIONS, JANUARY TO MARCH, 1923.

Institution.	White.		Coloured.		Native.		Total.	
	Total Examined.	Classified as Non-infective.						
Robben Island...	53	9	182	46	164	74	399	129
Pretoria.....	93	7	—	—	819	187	912	194
Emjanyana.....	—	—	—	—	633	224	633	224
Amatikulu.....	—	—	—	—	399	112	399	112
Mkambati.....	—	—	—	—	72	8	72	8
Bochem.....	—	—	—	—	86	26	86	26
<b>TOTAL....</b>	<b>146</b>	<b>16</b>	<b>182</b>	<b>46</b>	<b>2,173</b>	<b>631</b>	<b>2,501</b>	<b>693</b>

It will be seen that, out of a total of 2,501 patients examined, 693, or approximately 28 per cent., were classified as no longer requiring isolation on grounds of infectivity or danger to public health. Steps are being taken by the Department of the Interior to deal with these patients. Some will be returned to their homes, subject to suitable conditions as regards periodical re-examination and so forth, and with or without a maintenance allowance, according to their necessities; others, who have no homes to go to, will, on grounds of humanity, continue to be cared for by the Government or placed in the charge of other institutions or organizations.

All the bacteriological examinations required by the Board were carried out in the Government Bacteriological Laboratory at Cape Town, entailing a very large increase of work. The organization of a Leprosy Research Committee has been deferred until this Department takes over the administration of leprosy matters.

7. *Laboratories.*—The transfer of the Chemical Laboratories at Johannesburg and Cape Town to the Department of Agriculture as from 1st May, 1923, has already been mentioned.

The following table shows the specimens and material examined in, and the manufactures and issues made by, each Government laboratory and by the South African Institute for Medical Research, Johannesburg, on behalf and at the cost of the Government, during the year. Compared with previous years, there has been a large increase of public health specimens submitted by medical practitioners and local authorities. This indicates the increased extent to which the facilities for free laboratory examinations provided for in the *Public Health Act* are being taken advantage of, to the great benefit of the public health.

TABLE F.—CHEMICAL AND PATHOLOGICAL LABORATORIES: ANALYSES AND EXAMINATIONS, YEAR ENDED 30TH JUNE, 1923.

Particulars.	Chemical Laboratories.		Pathological Laboratories.		South African Institute for Medical Research Johannesburg.
	*Cape Town.	*Johannesburg.	Cape Town.	Durban.	
<i>Specimens Examined for:</i>					
Government Departments—					
Agriculture.....	148	553	11	—	—
Customs and Excise.....	398	1,086	8	—	22
Defence.....	—	8	198	98	1,458
Finance.....	—	—	—	—	—
Interior (Mental Hospitals and Leper Institutions)	2	—	2,533	286	238
Justice.....	65	672	—	290	527
Prisons.....	—	—	433	185	182
Mines and Industries	204	259	—	—	—
Miners' Phthisis...	—	—	—	—	5,247
Geological Survey.....	—	61	—	—	—
Native Affairs.....	—	1	—	—	—
Posts and Telegraphs	2	—	22	—	—
Public Health.....	1,497	662	646	2,542	13,253
Public Works.....	2	29	—	—	—
South African Railways	8	128	55	16	—
Other Government work.....	—	8	—	—	52
Provincial Administrations.....	—	4	—	25	—
General hospitals.....	—	19	596	941	3,335
Local authorities.....	68	832	1,057	1,369	2,847
Medical practitioners..	—	4	6,625	1,581	3,392
Members of the public	9	9	—	17	31
Other Governments or Administrations.....	—	10	342	—	1
Others.....	—	3	5	—	1,766
 TOTAL.....	2,403	4,348	12,531	7,350	32,351
<i>Manufactures and Issues:</i>					
Autogenous vaccines...	—	—	192	60	856
Bacterial vaccines (stock)	—	—	3,000 c.c.	—	564,442 c.c.
Smallpox vaccine—calf lymph (prepared at Vaccine Station, Rosebank)..... tubes	—	—	1,710,200	—	—
Tuberculin dilutions...	—	—	—	—	—
Attendances at Courts of Justice by members of staff.....	23	106	1	11	68
Total days' absence from office entailed by such attendances (part of a day being reckoned as one day).....	35	195	9	14	110

The present facilities and resources available for the investigation of the many urgent and important problems in connection with human diseases in the Union are hopelessly inadequate. The new wing to the South African Institute for Medical Research, Johannesburg, for the construction and equipment of which the Government is granting £20,000, will provide some additional laboratory accommodation, in place of the rear block of the Institute buildings, which has since its erection been occupied by the Miners' Phthisis Medical Bureau.

8. *Port Health Administration.*—It was not found necessary during the year to quarantine any vessel on account of infectious disease. Severe outbreaks of malaria occurred, either at Durban or on the voyage to Europe, on several vessels which had recently visited East Coast ports, especially Beira and Lourenco Marques. Warning circulars with directions as to precautionary measures were issued by the Department to shipping companies and masters of vessels.

Every effort has been made to keep down rats in port areas, and to safeguard against the introduction of plague infection. These efforts have so far been successful, but the risks are steadily increasing, owing to the increasing number of plague-infected ports having intimate trading relations with Union ports. During the latter part of the year under review, plague in man, or in rats, or in both, existed at many eastern and South American ports having intimate trade relations with Union ports, and also in Mauritius, Madagascar, Oran, Alexandria, Port Said, Kenya Colony, Cape Verde Islands, Canary Islands, Algiers, French Senegal, and Angola.

The construction of an isolation hospital and marine quarantine station at Rentzkie's Farm, Cape Town, was begun during the year. It will accommodate some 150 patients and contacts, and will be conveniently and economically administered and managed by the Cape Town Municipality in conjunction with its smallpox hospital. Patients can be conveyed from the Cape Town Docks to the hospital by rail without passing through the town. With the completion of this quarantine station the two terminal Union ports, Cape Town and Durban, will have reasonably adequate port health equipment, both as regards isolation accommodation and disinfecting facilities. At each of the intermediate ports certain facilities are available for dealing with occasional cases of infectious disease or small disinfections on board vessels. Should a serious outbreak occur on a vessel at any of these ports, the Public Health Act empowers the removal of the vessel to another port where adequate facilities exist.

During the year, the respective duties and responsibilities of the Health Department and the Railway and Harbour Administration in respect of health matters at ports were defined. It was agreed that there should be complete co-operation; that the Administration should carry out the duties of local authority in respect of the land areas at ports; that the Department should deal with all matters relating to shipping, and that where any officer or employee is employed jointly by the Department and the Administration, half of his emoluments should be paid by each.

The following table summarizes health work at Union ports during the year:—

TABLE G.—PORTS OF THE UNION: HEALTH ADMINISTRATION, YEAR ENDED  
30TH JUNE, 1923.

Particulars.	Cape Town.	Durban.	Port Elizabeth.	East London.	Mossel Bay.	Knysna.	Simons-town.	Port St. Johns.	Total.
Vessels dealt with..	847	1,153	520	536	180	36	57	37	3,366
Cases of infectious or communicable diseases dealt with	82	183	—	—	—	—	—	—	265
Vessels involved....	47	78	—	—	—	—	—	—	125
<i>Disinfections—</i>									
Vessels.....	23	4	—	—	—	—	—	—	27
Second-hand clothing and other articles	1,400	4,790	6,581	—	—	—	—	—	12,771

9. *Adulteration of Food and Drugs.*—The following table shows the action taken in this connection during the year:—

TABLE H.—ADULTERATION OF FOOD AND DRUGS, YEAR ENDED 30TH JUNE, 1923.

Province.	Samples Taken.	Samples Analysed.	Samples found Inferior, Deficient, or Adulterated.	Prosecutions Instituted.	Convictions Secured.	Remarks.
Cape (Ports)...	97	97	6	—	—	Suitably dealt with and importers warned.
Cape (Province)	2,129	2,105	79	71	58*	*Includes thirty-four samples of drugs, of which five were found not in accordance with the requirements of the British Pharmacopoeia.
Natal.....	289	287	58	44	40	—
Transvaal.....	832	832	89	†	†	Adulteration laws administered by municipalities within their areas.
Orange Free State.....	98	98	7	3	3	—
UNION....	3,445	3,419	239	118	101	

The need for an up-to-date and effective adulteration law for the Union, to safeguard both the health and the pockets of the public, remains urgent. A *Food, Drugs, and Disinfectants Bill* framed on these lines was published and circulated in January last, but the Minister of Public Health found it impossible to proceed with the Bill last session.

### III.—INFECTIOUS, COMMUNICABLE, AND PREVENTABLE DISEASES.

1. *Notifications.*—The following table shows the notifications of infectious diseases by medical practitioners during the year, the total for 1921 being inserted for comparison:—

TABLE I.—NOTIFICATIONS OF INFECTIOUS DISEASES BY MEDICAL PRACTITIONERS, 1921, AND YEAR ENDED 30TH JUNE, 1923.

Disease.	Calendar Year, 1921.	Year ended 30th June, 1923.											
		Union.		Cape Province, excluding Transkei.		Transkei.		Natal.		Orange Free State.		Transvaal.	
	Total.	Total.	Union.	Total.	W.	C.	W.	C.	W.	C.	W.	C.	W.
Anthrax.....	110	50	6	10	1	16	—	2	3	7	1	4	
Diphtheria.....	1,014	885	385	60	2	5	84	11	99	23	201	15	
Encephalitis : infective.	33	13	1	1	—	—	1	—	—	—	2	8	
Enteric or typhoid fever	4,511	4,163	1,071	669	11	39	404	231	275	120	663	680	
Erysipelas.....	167	194	71	27	—	1	6	2	14	1	51	21	
Glanders.....	—	—	—	—	—	—	—	—	—	—	—	—	
Leprosy.....	108	87	2	30	—	2	—	7	—	5	—	41	
Malta fever.....	27	27	12	3	—	—	2	1	2	—	—	7	
Meningitis : Epidemic cerebro-spinal.....	113	515	8	15	2	7	3	1	3	—	91	385	
Ophthalmia—													
Gonorrhoeal.....	22	12	—	2	—	—	—	—	3	—	4	3	
Neonatorum.....	98	82	14	25	—	—	6	2	4	2	27	2	
Plague.....	33	2	—	2	—	—	—	—	—	—	—	—	
Poliomyelitis : acute....	33	5	2	2	—	—	—	1	—	—	—	—	
Puerperal fever, including puerperal sepsis.	134	136	38	33	2	1	10	3	4	6	33	6	
Rabies.....	—	—	—	—	—	—	—	—	—	—	—	—	
Scarlatina or scarlet fever.....	920	2,042	255	15	1	2	63	1	89	8	1,592	16	
Smallpox.....	787	285	8	92	4	61	—	10	1	8	6	95	
Tuberculosis.....	2,962	3,612	271	1,847	—	332	55	200	36	96	38	737	
Typhus.....	6,257	3,762	31	624	6	2,419	1	74	9	419	9	170	
TOTAL.....	17,329	15,872	2,175	3,457	29	2,885	635	546	542	695	2,718	2,190	

† Figures not available.

2. *Anthrax*.—Considerable sporadic prevalence of this disease, mostly in persons handling or frequently in contact with cattle, continues. In February a serious outbreak occurred at Paarl, infection being derived from sick animals at a slaughter-house there and on a farm in the vicinity run in connection with the slaughter-house. Six cases, one of which proved fatal, occurred locally. A European butcher at Pniel, who had been supplied with meat from the infected butchery, developed anthrax and died, whilst another fatal case occurred in a European employee at a butchery in Woodstock, Cape Town, to which meat from the infected butchery in Paarl had been sent. This outbreak strikingly illustrated the very unsatisfactory conditions existing at Paarl in regard to slaughtering and the inspection of meat; strong representations on the subject were made to the municipality.

3. *Enteric or Typhoid Fever*.—This disease continues unduly prevalent in many places, including some of the larger towns. The following table shows the notifications and incidence rate of the disease in certain local authority areas:—

TABLE J.—TYPHOID OR ENTERIC FEVER : NOTIFICATIONS AND INCIDENCE IN CERTAIN AREAS DURING THE YEAR ENDED 30TH JUNE, 1923.

	Notifications.			Incidence per 1,000 of Population.		
	White.	Coloured.	Total.	White.	Coloured.	All Races.
Hobhouse.....M.	14	—	14	36.08	—	29.29
Rietbron.....V.M.B.	10	—	10	35.36	—	28.99
Prince Albert.....M.	32	18	50	27.87	21.33	25.10
Weenen.....M.	11	13	24	22.63	25.00	23.86
Laingsburg.....M.	16	14	30	16.58	22.95	19.05
Philipstown.....M.	22	1	23	28.99	1.92	17.95
Van Rhynsdorp.....M.	10	1	11	20.28	3.19	13.65
Heidelberg (C.).....M.	18	9	27	19.48	8.25	13.48
Paul Roux.....M.	8	1	9	13.82	4.22	11.03
Vosburg.....M.	5	1	6	12.63	5.49	10.38
Edenburg.....M.	14	2	16	16.67	2.61	9.97
Komgha.....M.	8	—	8	19.23	—	9.95
Lady Grey.....M.	12	3	15	13.75	3.57	8.75
Wepener.....M.	16	—	16	14.36	—	8.11
Middelburg (C.).....M.	28	2	30	13.31	0.88	6.85
Zuurbraak.....V.M.B.	1	7	8	6.25	6.72	6.66
Utrecht.....M.	6	7	13	9.02	4.53	5.89
Hopetown.....M.	7	1	8	9.85	1.48	5.78
Ermelo.....M.	23	—	23	8.47	—	5.05
Klerksdorp.....M.	2	26	28	0.64	10.14	4.92
Uitenhage.....M.	49	17	66	6.27	2.66	4.64
Germiston.....M.	56	139	195	3.57	5.21	4.60
Colesberg.....M.	9	2	11	8.99	1.28	4.29
Robertson.....M.	8	11	19	3.09	5.93	4.28
Lichtenburg.....V.C.	11	—	11	9.93	—	4.16
Senekal.....M.	9	1	10	7.51	0.80	4.10
Keiskama Hoek.....M.	8	—	8	15.26	—	3.94
Bethlehem.....M.	16	7	23	4.73	2.35	3.61
Durban*.....M.	257	83	340	5.09	1.66	3.38
Bloemfontein*.....M.	86	41	127	4.68	2.03	3.29
Burghersdorp.....M.	10	1	11	5.17	0.58	3.23
Caledon.....M.	6	3	9	4.00	2.26	3.18
Boksburg.....M.	25	91	116	2.01	3.56	3.14
Riversdale.....M.	5	4	9	3.39	2.84	3.12
Innesdale.....V.M.B.	30	2	32	3.51	0.65	2.95
Springs.....M.	5	50	55	1.11	3.35	2.84
Oudtshoorn.....M.	15	14	29	2.70	2.71	2.71
Pretoria*.....M.	113	56	169	2.97	2.11	2.62
Port Elizabeth*.....M.	70	27	97	2.90	2.08	2.61
Kroonstad.....M.	14	9	23	3.26	1.78	2.46
Beaufort West.....M.	9	6	15	2.94	1.91	2.42
Roodepoort-Maraisburg.....M.	22	34	56	3.08	2.01	2.33
Wellington.....M.	10	2	12	3.75	0.80	2.32
Krugersdorp.....M.	22	72	94	1.64	2.48	2.21
Grahamstown.....M.	12	20	32	1.66	2.61	2.15
Korsten.....V.M.B.	7	8	15	9.89	1.23	2.09
Cape Town*.....M.	218	164	382	2.04	1.96	2.00
De Aar.....M.	4	3	7	3.08	1.34	1.98
Wynberg*.....M.	18	25	43	1.72	2.21	1.89
Pietermaritzburg*.....M.	38	20	58	2.07	1.07	1.51
Johannesburg*.....M.	169	132	301	1.08	0.97	1.03

M.—Municipality. V.M.B.—Village Management Board. V.C.—Village Council.

\* Rates calculated on estimated population as at 30th June, 1923; other rates on population as at Census, 3rd May, 1921.

A serious epidemic, comprising some 129 European and 7 native cases occurred in Durban during the four weeks ended 21st October. The cases occurred in all parts of the borough. There were facts and circumstances casting suspicion on both water and milk as vehicles of spread of the infection, but the cases were not localized to any area with a water supply from a particular source or confined to persons obtaining their milk supply from any particular dairy. The outbreak and all the circumstances connected therewith were carefully investigated by officers of the Department, in conjunction with the municipal health authorities, but it proved impossible to arrive at any definite conclusion as to the primary source of the outbreak. An important fact elicited by the investigation was the large percentage of natives employed in Durban dairies whose blood gave a positive reaction with the Widal test. Everything possible was done by the municipality and all concerned to arrest the outbreak and to prevent a recurrence.

A very sudden and virulent outbreak occurred during November amongst the boarders and staff at St. John's School, Frere, Estcourt District. Out of a total of 50 pupils and 21 staff, 39 pupils and 13 members of the staff were attacked—all within a period of a week or so. The outbreak was investigated by local medical officers and health officers of the Department; the infection is believed to have been conveyed to the school by a person from Durban, and its rapid spread was probably due to the specific contamination of foodstuffs.

In January and February a small outbreak (9 cases) occurred at the Kaalplaats Diamond Diggings, near Vereeniging. The arrangements hitherto in operation for maintaining reasonable cleanliness and sanitation in alluvial diamond diggings have been very unsatisfactory; it is indeed somewhat surprising that outbreaks of enteric and other filth diseases at such diggings are not more frequent.

4. *Influenza*.—During the year there were prevalences of infectious catarrhs or influenza of mild type in a number of centres in the Union, but no outbreak of severe influenza occurred.

5. *Malaria*.—A severe epidemic occurred during the period February to May inclusive, in the Natal-Zululand coastal belt and the northern Transvaal. Over 100 European and over 500 native deaths were recorded, but owing to incomplete notification the actual mortality, especially amongst natives, was no doubt considerably more than this.

The coastal belt between Stanger and Empangeni, to a distance of ten miles inland, was severely affected, the incidence being heaviest in March and April and attaining a maximum late in April. In the northern Transvaal the period of heaviest incidence was the same. The districts specially affected were Waterberg, Potgietersrust, and Louis Trichardt, but very considerable prevalence occurred throughout the whole of the northern Transvaal, extending as far south as Pretoria.

The epidemic was not so widespread or severe in type as that of 1920, but two such severe outbreaks within such a short period are not known to have previously occurred. The conditions favouring the unusual prevalence of anopheline mosquitoes in the affected areas were generally ascribed to an evenly distributed and fairly abundant rainfall, with an absence of "cold snaps." In many affected areas the disease first became epidemic in localities where malaria regularly occurs every year in the immediate neighbourhood of water-courses. In some places it became severe and epidemic after the arrival of persons suffering or recovering from severe attacks contracted elsewhere. The epidemic rapidly spread to areas which are usually free of the disease and where water-courses or collections of water are non-existent.

in normal years. The character of the rainfall during this season provided abundant breeding-places for anophelines far from their usual and permanent haunts.

The type of inhabitants and the living conditions in the Natal-Zululand coastal belt differ materially from those of the northern Transvaal, and these two areas present very different malaria problems. The former has in recent years been converted from grass and bush country, with a population of natives living under tribal and kraal conditions, into cultivated sugar-lands occupied by intelligent Europeans. The original native inhabitants no doubt suffered from malaria at times, but when a severe outbreak commenced they usually moved, with their families and cattle, to the hills inland and remained there until the cold weather set in. At present the native labourers in this belt live for the most part under what may be called "barrack conditions." Many of them are recruited from Pondoland and other parts where malaria is unknown, and consequently are very susceptible to infection and liable to be more severely affected than the original native population. Where employers have taken proper precautions, the incidence of the disease has not been serious. In this area there is no good reason why malaria should materially hinder the progress of agriculture and sugar production, provided employers of native labour make proper arrangements for mosquito prevention and prophylaxis.

In the malarial areas of the northern Transvaal the types of inhabitants and the living conditions may be grouped into three classes:—

- (a) The well-to-do European rancher, who has his residence at a good distance from water-courses or collection of water, recognizes the danger of malaria, and takes proper precautions; he, his family, and native employees usually suffer little.
- (b) The European settler, more or less of the "poor white" class, who is totally ignorant of malaria prophylaxis, and who prefers to live as close as possible to the domestic water supply and his irrigation furrows; the incidence of malaria is particularly severe among people of this type and amongst their native employees.
- (c) Natives under kraal and tribal conditions (far outnumbering the European settlers and the natives on lands owned by Europeans) living in areas specially reserved by Government for their occupation. Malaria among these is severe during exceptional seasons, and owing to the configuration of the country they cannot easily avoid the disease by temporarily shifting their residence. The incidence of the disease is not, however, so severe among these natives as among the settlers of the "poor white" type and the native employees resident on their farms.

The following were the principal measures taken in connection with the epidemic:—

Free issue of quinine by the Department to indigent persons in the affected areas; non-indigents supplied with quinine at cost price. The distributing agents in each district were appointed by the Magistrate.

Advice as to the treatment and prevention of malaria was published in the Press, and otherwise broadcasted. The Malaria Committee of the Transvaal Red Cross Society have rendered very useful service in disseminating knowledge of the disease and its mode of propagation and spread.

Special tours and free treatment of indigents by district surgeons were authorized throughout the affected areas.

In certain severely affected areas, nurses were employed by the Department for district visiting work, and relief afforded in the shape of food and medicine for indigent cases.

The whole question of preventing and combating malaria in these areas, especially in connection with land settlement and irrigation, calls urgently for review and reconsideration by the several Departments concerned. It is

not merely a question of public health ; malaria is at present preventing or seriously retarding the development of large and fertile tracts of country in the northern and eastern Transvaal. A good illustration of what can be achieved by care and competent attention, and at very little cost, was afforded at the Irrigation Works, Hartebeestpoort area. In previous epidemics this locality has invariably suffered severely. During the recent outbreak, as a result of measures to prevent mosquito-breeding taken by the Government, the area escaped almost entirely.

6. *Plague*.—In November, 1922, during the course of a systematic search with a rodent destruction gang, one of the Department's inspectors found a recently dead rat in an outbuilding on the farm Cyferfontein, Vredefort District, Orange Free State, which proved on bacteriological examination to be plague-infected. There was evidence of considerable recent mortality in rodents—rats, gerbilles, and multimammate mice—in the locality.

In December, 1922, two natives on the farm Klipfontein, Molteno District, Cape Province, were found to be suffering from bubonic plague. One of the patients recovered, the other died. Neither of the natives had recently been away from the neighbourhood. No trace of rodent infection was discoverable in the farm buildings or vicinity. Inquiries showed that both patients, some days before attack, had been on a neighbouring farm Sieraadsfontein, and after extended search on this farm, plague infection in gerbilles was discovered.

A survey of the surrounding country to a radius of about a hundred miles from this focus of infection was then made, and the results charted. It has been found possible for trained rodent inspectors to make rapid surveys of this kind by going over the country, noting the presence or absence of surface indications of gerbilles and other wild rodents, and the proportion of deserted burrows—the surface observations and deductions therefrom being from time to time checked or verified by excavations and the finding of remains of rodents. Our experience indicates that extensive mortality in gerbille colonies can be safely attributed to plague ; no evidence of any other fatal epizootic disease among them has so far been discovered. Useful information can also be gained by examining the excreta of the yellow mongoose (*Cynictis pectinata*). This animal, which, like the suricat, is not a rodent but a carnivore, lives on friendly terms with the gerbilles and does not attack them so long as they are healthy, but it kills and devours the sick, and eats the carcasses of dead, gerbilles. Under natural conditions it appears rarely, if ever, to contract plague. Its usual food consists of insects, lizards, small snakes, birds' eggs, etc. Where a mongoose has devoured dead gerbilles, its excreta show the fur of these animals ; furry mongoose dung has come to be regarded by our plague staff as strongly suggestive of sick gerbilles and plague. The time which has elapsed since an outbreak of plague has overtaken a gerbille colony can usually be estimated from the appearance of the excreta and burrows, the amount of denudation of the mounds of earth, and the growth of vegetation thereon.

Maps have been prepared on the basis of these surveys showing in distinctive colours (a) areas where there is positive evidence of plague, either recently or within the last two or three years ; (b) areas where gerbilles and associated wild rodents are abundant and healthy ; (c) areas where gerbilles and associated wild rodents are very scarce or absent, owing to unsuitability of the soil and herbage. The latter constitute barriers to the natural spread of infection.

Observations and experience during these surveys point to the conclusions that during the spread of plague amongst wild veld-rodents the heaviest mortality is amongst gerbilles (*Taterona lobengula*) and multimammate mice (*Ratus coucha*), ground-squirrels [*Xerus (Geosciurus) capensis*] being only occasionally

infected, and that common water-rats (*Otomys irroratus*), mole-rats (*Cryptomys*) and Eastern Karroo rats (*Barotomys luteolus*) rarely show mortality, except when living in close proximity to infected gerbille colonies. In some parts surveyed, Eastern Karroo rats were very numerous; it is a fortunate circumstance that under natural conditions plague does not readily spread amongst them. It has been found that spring-hares (*Pedetes caffer*) disappear from an area concurrently with a plague epizootic amongst gerbilles; up to the present none of these animals have been found definitely plague-infected. Several dead white-footed rats (*Mystromus albipes*) have been found in the vicinity of plague-infected gerbille burrows. There is evidence from two or three localities that rock-rabbits or "dassies" (*Procaria capensis*) have been seen dead and have disappeared from places where they had been numerous for years, concurrently with plague in gerbilles; up to the present, none of these animals have been found plague-infected. Ground-squirrels and suricats (*Suricator suricator*) die out during a wave of infection concurrently with the gerbilles, but do not appear to play important rôles in spreading or perpetuating the infection.

Our experience goes to show that, although the original agent in conveying plague-infection from the domestic rat to the wild fauna was probably the striped mouse (*Arvicanthus pumilio*), the animal of greatest importance in perpetuating and spreading the infection amongst the wild rodents of the Union is the gerbille. It is to be noted, however, that wherever these animals exist in numbers, multimamate mice, ground-squirrels, and spring-hares are, as a rule, also common; the conditions of soil, herbage, and insect life which favour any one of these species favour all. Evidence of recent infection is easier to find, and in actual practice is more frequently found, in gerbilles than in any of the other animals mentioned. Gerbille burrows are easily located and the animals frequently die in their burrows. Animals of the other species mentioned usually die in the open, and their carcasses are in most cases quickly eaten or carried off by mongoose, suricats, wild cats, or birds of prey, or covered up and disposed of by ants.

The survey commenced from the focus in the Molteno District showed that plague-infection either existed or had recently existed among wild rodents in an area embracing all or portions of the following districts: Adelaide, Albert, Aliwal North, Cathcart, Colesberg, Cradock, Glen Grey, Fort Beaufort, Kingwilliamstown, Maraisburg, Middelburg, Molteno, Queenstown, Sterkstroom, Steynsburg, Stockenstrom, Stutterheim, Tarka, Victoria East, and Wodehouse. This area is separated from the area of enzootic plague-infection in the north-western Orange Free State, described in last Annual Report, by some 70 miles of country, some of which is inhabited by healthy gerbilles and some unsuitable for and devoid of gerbilles; no connecting band of infected country can be traced between the two areas. The survey is being continued and extended.\*

It is of interest to note that this survey, which included the farm Fairview, Tarka District, where a virulent and extensive outbreak of plague, mostly of the pneumonic type, occurred in 1914, showed that a gerbille-infested belt runs into the farm from the direction of Queenstown, ending about fifty yards from the huts in which the first cases occurred in 1914. There were unmistakable

\*The survey of the south-western Transvaal has since been completed. It shows that plague-infection exists or has recently existed in portions of the following districts: Sehweizer-Reneke, Wohrnaransstad, Lichtenburg, Potchefstroom, Rustenburg, and Krugersdorp. Evidence of infection was found within five or six miles of Rustenburg on the north of the area, and within two or three miles of Krugersdorp and twenty-five miles of Johannesburg on the east of the area. A strip of country varying in width from five to twenty-five or thirty miles on the north of the Vaal River is unsuitable for and, for the most part, devoid of gerbilles. Welverdiend, in the Potchefstroom District, where 15 cases of plague, 14 of which were fatal, occurred in 1917, is close to the southern border of the area of enzootic infection in wild rodents. Steps are at present being taken to demarcate accurately the western limits of this infected area, especially in the neighbourhood of Krugersdorp and Johannesburg, and to ascertain whether active infection at present exists there.—J. A. M., 2nd October, 1923.

indications that there had since, and comparatively recently, been a further wave of plague-infection among the gerbille colonies on the farm.

Apart from the investigations and researches above referred to, a publicity campaign has been carried on with a view to keeping the public and the local authorities informed of the position and warned of the danger and of the necessity for preventive measures; the Railway Administration has placed men trained by this Department in rodent-destruction and plague-prevention work at railway stations and sidings in and near infected areas at which grain or forage is gathered for dispatch by rail. (It may be mentioned incidentally that in several instances railway embankments have been found riddled with gerbille burrows in such a way as to endanger traffic.) Special measures have been taken at ports and port areas in conjunction with the local authorities to destroy rats and prevent the introduction or conveyance of infection. Efforts have been made to limit or prevent the spread of waves of infection amongst wild rodents by clearing of gerbilles narrow belts of rodent-infested country bounded by country unsuitable for and free from gerbilles and connecting an area in which the wild rodents are infected with another gerbille-infested area which is free from infection. A good deal of attention has been given to making "plague fire belts" of this kind in the Vredefort area south of the Vaal River and in the valleys of the Sand and Vet Rivers, lying between the infected area of the north-western Orange Free State and the non-infected gerbille country in the eastern Orange Free State and Transvaal districts adjoining. As already mentioned, active and virulent infection was found among rodents in the Vredefort District in November last; this was undoubtedly part of a wave of plague-infection spreading eastward.

Representations have been made to the Orange Free State and Cape Provincial Administrations and the Divisional Councils of infected districts in the Cape Province urging the protection of natural enemies of wild rodents, such as wild cats and owls. The Orange Free State authorities have agreed to protect owls; the Cape Provincial Administration has withdrawn its share of rewards in respect of the destruction of the common wild cat and the "misseljaar" cat, and has left further action to the discretion of the Divisional Councils.

7. *Rabies (Hydrophobia).*—In December, 1922, a suspected outbreak was reported at Lobatsi, in British Bechuanaland, near the Union border—a locality in which a suspected outbreak occurred in November, 1919. The Chief Veterinary Officer, British Bechuanaland, reported that six dogs had died with symptoms of rabies; one animal was found sick with similar symptoms, and it was killed and its brain sent to the Onderstepoort Veterinary Laboratory for examination. The results were, however, negative, so that the diagnosis remains doubtful. Precautions were instituted by the Protectorate Government. No other cases or suspected cases either in animals or man have since been reported.

8. *Sleeping Sickness.*—The precautions mentioned in previous annual reports have been continued. No cases or suspected cases occurred in the Union during the year. A fatal case in a prospecting engineer was reported from the Tete District, south of the Zambesi, in December, 1922. Previous cases in natives are known to have occurred in this neighbourhood. It is understood that the Mozambique Government is investigating the prevalence of tsetse flies and the occurrence of sleeping sickness in the northern part of the Province, including the Tete District.

9. *Smallpox and Vaccination.*—The following tables show the number of outbreaks and cases of and deaths from smallpox during the year, the state as to vaccination of the cases, vaccination of infants and children amongst

the classes which register births, and the total public vaccinations carried out during the year:—

TABLE K.—(i) SMALLPOX : CASES AND DEATHS DURING THE YEAR  
ENDED 30TH JUNE, 1923.

Province.	Number of Districts Affected.	White.		Coloured.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	34	12	—	289	10	301	10
Natal.....	5	—	—	18	1	18	1
Transvaal.....	15	9	—	189	2	198	2
Orange Free State..	6	1	—	13	—	14	—
TOTAL.....	60	22	—	509	13	531	13

TABLE K.—(ii) STATE AS TO VACCINATION OF CASES OF SMALLPOX REPORTED  
DURING THE YEAR ENDED 30TH JUNE, 1923.

Particulars.	White.		Coloured.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Previously vaccinated*.....	3	—	81	2	84	2
Unvaccinated.....	19	—	428	11	447	11
TOTAL.....	22	—	509	13	531	13

\* In most instances many years previously.

TABLE K.—(iii) VACCINATIONS OF INFANTS AND CHILDREN IN THE CLASSES OF THE POPULATION WHICH REGISTER BIRTHS, DURING THE YEAR ENDED 30TH JUNE, 1923.

(The figures do not include revaccinations of twelve-year-old children.)

Heading.	Cape.		Transvaal.		Natal.			Orange Free State.	Union.
	Cape District.	Remainder of Province.	Rand Area.	Remainder of Province.	Durban.	Pietermaritzburg.	Remainder of Province.		
Births entered in vaccination Register.....	8,147	45,273	7,895	9,928	1,734	628	1,592	4,889	80,086
Succesfully vaccinated.....	4,281	4,832	984	2,155	828	315	1,089	573	15,057
Insusceptible to Vaccination...	1	—	8	9	15	14	27	1	75
Vaccination postponed owing to illness.....	21	143	53	122	113	27	115	60	654
Previously had Smallpox.....	—	—	1	2	—	—	—	—	3
Deaths of infants under two years registered.....	2,664	2,265	1,117	986	143	44	126	283	7,628
Ratio of vaccinations registered to births registered during the year (after allowing for deaths of infants under two years).....	78·10	11·24	14·65	24·22	52·98	56·34	76·13	12·46	20·89

TABLE K.—(iv) PUBLIC VACCINATIONS DURING THE YEAR ENDED  
30TH JUNE, 1923.

Province.	Number of Centres at which Public Vaccinations were held.		Number of Visits of Public Vaccinators to Centres.		Numbers Vaccinated.				Total.	
					White.		Coloured.			
	Urban.	Rural.	Urban.	Rural.	Primary.	Revac- cinations.	Primary.	Revac- cinations.		
Cape.....	191	2,065	549	2,078	18,656	2,039	136,858	108,527	266,080	
Natal.....	51	390	160	391	1,107	742	40,789	6,385	49,023	
Transvaal....	101	548	1,132	559	16,700	3,516	95,648	94,691	210,555	
Orange Free State.....	52	270	137	270	4,305	676	9,541	3,744	18,266	
<b>TOTAL.....</b>	<b>395</b>	<b>3,273</b>	<b>1,978</b>	<b>3,298</b>	<b>40,768</b>	<b>6,973</b>	<b>282,836</b>	<b>213,347</b>	<b>543,924</b>	

“Conscientious objectors” to vaccination have in several centres made it difficult or impossible to enforce the law. Either the present law should be rigorously enforced or it should be amended so as to lay down a suitably restricted and safeguarded procedure under which the genuine conscientious objector to vaccination may obtain exemption.

As will be seen from the tables, the disease has been kept well under control during the year, although the Union has never been free from outbreaks. The type of the disease was for the most part mild.

10. *Tuberculosis*.—The construction of the Nelspoort sanatorium buildings is proceeding satisfactorily; it is hoped that the institution will be ready for opening in December or January next.

The tuberculosis survey of the Union by Dr. P. Allan, medical inspector, referred to in last annual report has been completed. Dr. Allan’s report is being published separately.

The prohibition of the removal of horned cattle from the Cape and Stellenbosch Districts, except after passing the tuberculin test, imposed under the *Stock Diseases Act* in 1917, by the Department of Agriculture, was cancelled and withdrawn by Government Notice No. 718 of 3rd May, 1922.

In January last a representative deputation waited on the Minister of Agriculture in Cape Town regarding tuberculosis in dairy cattle, when the various aspects of the position were discussed and certain proposals put forward. So far as ascertained nothing further has been done in the matter, and the risks of spread by tuberculous milk remains as stated in the last report.

An enterprising dairy company has recently established a pasteurizing plant of modern design (Nicksen process) at Pietermaritzburg, and is constructing a similar plant at Johannesburg. The results will be of great public health interest. If it is established that this apparatus destroys all infections, including that of tubercle, in milk, the new process will mark a notable advance. If disease infections cannot be excluded from milk supplies, then the next best thing is to destroy them before the milk is sold to the public.

11. *Typhus*.—The following table shows typhus cases and deaths reported in each Province during the year:—

TABLE L.—TYPHUS FEVER : CASES AND DEATHS DURING THE YEAR ENDED 30TH JUNE, 1923.

Province.	Number of Districts Affected.	White.		Coloured.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	62	39	3	6,079	604	6,118	607
Natal.....	6	3	1	353	56	356	57
Transvaal.....	12	6	1	194	23	200	24
Orange Free State..	18	8	1	417	66	425	67
<b>TOTAL.....</b>	<b>98</b>	<b>56</b>	<b>6</b>	<b>7,043</b>	<b>749</b>	<b>7,099</b>	<b>755</b>

It will be seen that of the total of 7,099 cases, 6,079 were reported from the Cape Province, the great majority of these being in the Transkei. There is reason to believe that many cases and deaths, especially in the remote native areas, escape notification. A considerable prevalence of the disease occurred in the "Diggers' Locations" along the Vaal River, in the Barkly West District, in October.

The campaign of publicity and educative work has been continued, and throughout the native territories the fact that typhus is spread by lice is now realized by practically all the natives. Leaflets and circulars giving directions as to the best methods of disinfection have been widely distributed to local authorities and the population of affected districts. Local partly-trained men for deverminizing work have been replaced, as far as possible, by specially-trained officers with light motor-trolley transport which, with an outfit of deverminizing apparatus, can move rapidly from place to place as required. Steps are being taken to introduce a scheme under which naphthalene oil will be sold to natives by storekeepers throughout the Transkei at about cost price, the Government supplying at wholesale rates and bearing the cost of transport. The natives generally recognize the efficacy of the oil and use it freely. Most local authorities which are exposed to occasional introductions of the infection have now organized measures for keeping the natives in their areas reasonably free from lice. Typhus is entirely a louse-borne disease, and it does not spread except in lousy communities. It is possible for every member of the population to make and keep himself clear of lice, and it seems unnecessary and unjustifiable to do this for him at the cost of the public taxpayer once he is made to understand clearly the nature of the disease and the causes of its persistence and spread. Apart from financial considerations, such a procedure is like ploughing the sands ; the effects of a cleansing and delousing campaign carried out at the public expense in a large native area, where subsequent supervision is impracticable, are transitory ; there is no incentive to the natives thereafter to keep themselves clean, and in a short time they are often as lousy as ever.

In the nature of things it will be impossible to eradicate typhus in the Union until the general standard of cleanliness and freedom from lice of the natives has materially improved, and until a similar improvement has been effected in neighbouring territories, especially Basutoland. This process can best be expedited (i) by active educative and publicity work ; (ii) by affording the natives reasonable assistance and facilities for making and keeping themselves free of lice ; (iii) by prosecuting or penalizing lousy natives, and (iv) by as far as possible preventing lousy natives from leaving their kraals or locations. Coupled with this, every effort should be made—through native

representative bodies, chiefs, headmen, schools, missionaries, the native Press, and all other available agencies—to secure the active co-operation and assistance of the natives themselves. The Typhus Regulations at present in force throughout the Union contain clauses requiring persons to keep themselves clean and free from vermin ; requiring farmers, mining companies, and other employers of native labour and local authorities to provide their employees and inmates of their locations with reasonable means and facilities for cleansing and keeping themselves free from vermin, and placing on them the duty of seeing that such facilities are made use of. They also empower station masters and railway officials to refuse tickets to, and exclude or remove from trains, persons who are dirty or verminous ; there are, however, obvious difficulties in enforcing these latter requirements.

Apart from public health and humanitarian considerations, the amount of sickness and mortality—almost exclusively native—now occurring in the Union from typhus is a very serious matter and is bound to have a prejudicial effect on native labour supplies and general development. Where natives are under a reasonable amount of control, as in a mine compound or municipal location, or on a farm, it is not difficult to keep them free, or comparatively free, from lice, and where serious outbreaks of typhus occur under such circumstances, those responsible have only themselves to blame. But in the vast stretches of the Transkei and other native areas, with their teeming native population—ignorant, suspicious, and apt to resent restriction or control—the problem is a very different and a much more difficult one. Experience shows that it can best be tackled on the lines already indicated, but progress is likely to be slow.

12. *Venereal Diseases.*—Further progress in the organization and carrying out of measures for dealing with these diseases has been made during the year. In January last a simply-worded pamphlet, in English and Dutch, setting out the chief facts regarding them was distributed to all local authorities ; also instructions to patients—in English, Dutch, and four native languages—was distributed through the local authorities to all medical practitioners in the the Union, for supply to patients as required by section 55 of the *Public Health Act*, 1919. Publicity and educative measures were continued through the Press and otherwise, with the co-operation and assistance of the Cape and Transvaal branches of the Society for Preventing Venereal Diseases. A comprehensive circular to magistrates and district surgeons regarding the free supply of anti-syphilitic drugs by the Department and the best methods of treatment, was issued in September, 1922. Improved facilities for dealing with venereal disease have been provided (with a two-thirds refund from the Department under the *Public Health Act*) at Pretoria, Barberton, Port St. Johns, and several other places. An arrangement has been made with the mines of the Rand area under which they will treat cases of venereal disease amongst natives in their employ, or pay for their treatment at the Rietfontein Hospital, except where the disease has developed within a specified time after, and was presumably contracted before, engagement. The net effect of this arrangement has been to reduce greatly the expenditure on mine natives at Rietfontein and to set free for other syphilitic cases accommodation hitherto occupied by mine natives.

All information obtained during the year goes to confirm the views expressed in the last report that statements to the effect that in some districts 50 or 60, or even 80 or 90, per cent. of the native population is actively syphilitic, are gross exaggerations. It is doubtful whether amongst any considerable native community in the Union there are more than 10 per cent. actively syphilitic. Undoubtedly, amongst the coloured and native populations at the ports and amongst the natives in the districts of the north-western Cape, Bechuanaland, and western and northern Transvaal, syphilis is seriously

prevalent, but the natives for the most part are coming for treatment with increasing freedom. The facilities for treatment have, during the past few years, been greatly improved and extended, and old-standing cases of the disease with serious tertiary lesions are not nearly so common as previously. This general improvement in the position is doubtless due to two main factors: the extension and improvement of facilities for effective treatment and the progressive immunization or "salting" of the natives.

The total expenditure on free issues of anti-syphilitic drugs by the Department during the year was £3,465, as compared with £2,988 for the first half of 1922, and £3,641 for the calendar year 1921.

The number of laboratory examinations in connection with venereal diseases, carried out by or at the cost of the Government, has enormously increased. That medical men are making use of these facilities to an increased extent is to the general public advantage, but it has been found necessary to take some steps to discourage or prevent the submission of specimens which are not essential for diagnosis or proper treatment.

The following table summarizes the work in connection with venereal diseases done by district surgeons, local authorities, and institutions during the year. It will be seen that, in round figures, 65,000 cases have been dealt with, as compared with 24,000 during the first half of 1922, 45,000 during 1921, and 25,000 during 1920. The increase indicates, not increased prevalence, but the increased extent to which the improved and extended facilities provided by the Government and local authorities are being taken advantage of.

TABLE M.—VENEREAL DISEASES: CASES TREATED AND ATTENDANCES DURING THE YEAR ENDED 30TH JUNE, 1923.

Locality.	In Hospital.				Outdoor Attendances.				Total.	
	Syphilis.		Gonorrhoea and Other Venereal Diseases.		Syphilis.		Gonorrhoea and Other Venereal Diseases.			
	W.	C.	W.	C.	W.	C.	W.	C.		
<i>By District Surgeons:</i>										
Cape.....	22	809	9	39	197	4,852	165	431	6,524	
Natal.....	15	232	2	91	52	573	25	135	1,125	
Transvaal.....	1	54	5	3	171	4,322	36	88	4,680	
Orange Free State.....	1	42	11	77	127	1,214	53	130	1,655	
<i>At Institutions:</i>										
Barberton.....	—	62	—	—	—	6	—	—	68	
Bloemfontein.....	10	114	3	19	10	80	14	1	251	
Bochem.....	—	1,162	—	25	—	10,687	—	—	11,874	
Cape Town.....	2	84	2	11	1,642	1,791	754	444	4,730	
Colesberg.....	—	21	—	—	—	—	—	—	21	
Cradock.....	—	21	—	—	—	—	—	—	21	
East London.....	—	—	—	—	160	286	84	66	596	
Elim.....	6	551	1	30	6	959	13	150	1,716	
Johannesburg.....	—	—	—	—	4,107	—	2,855	—	6,962	
Kimberley.....	7	189	7	34	87	261	12	39	636	
Kingwilliamstown.....	4	123	1	—	—	4	—	—	132	
Kuruman and Oliphantshoek	—	26	—	—	—	1,939	—	—	1,965	
Oudtshoorn.....	—	—	—	—	19	372	—	—	391	
Pietermaritzburg.....	—	57	1	5	307	241	59	57	727	
Port Elizabeth.....	8	104	2	4	89	296	121	23	647	
Pretoria.....	—	—	—	—	189	3,906	27	85	4,207	
Rietfontein.....	192	2,354	117	264	2,919	3,739	—	—	9,585	
Secucuniland (Furze Memorial).....	—	8	—	—	—	4,791	—	—	4,799	
Stellenbosch.....	—	5	—	—	—	102	—	—	107	
Victoria West.....	—	—	—	—	—	9	—	8	17	
Vryburg.....	—	164	—	1	—	1,813	—	—	1,978	
<b>TOTAL.....</b>	<b>268</b>	<b>6,182</b>	<b>161</b>	<b>603</b>	<b>10,082</b>	<b>42,243</b>	<b>4,218</b>	<b>1,657</b>	<b>65,414</b>	

#### IV.—GENERAL.

1. *Housing*.—The housing position in most of the large centres is considerably easier owing to the general financial depression causing some efflux from the towns, and also to the fall in building costs. In some centres, however, especially Durban, it is still serious.

Reports for the year regarding overcrowding and bad or insufficient housing have been obtained from all urban local authorities, as required by section 121 of the *Public Health Act*, and are being considered by the Department and the Central Housing Board.

The *Housing Act*, No. 35 of 1920, has been in force since August, 1920. The Act was based on the recommendations of the Housing Committee appointed by the Government in July, 1919. From the broad standpoint of public health and general public interest, the Department considers it preferable for the Government and public bodies to devote primary attention to permanent measures of improvement, such as housing, town-planning, water supply, and sewerage, rather than to minor measures, mostly of transitory effect, for dealing with infectious and preventable diseases. Apart from this it is to the advantage of the State to encourage and assist every citizen to become the possessor of his own dwelling. In this respect the policy of the *Housing Act* is in line with that of the Income Tax law of the Union, under which no income tax is levied in respect of a dwelling owned by the occupier. The results of this policy, as shown by the Census Reports, are very gratifying. In 1918, out of a total of 125,158 European dwellings in urban areas, 44,641, or 35.7 per cent., were owned by the occupier; in 1921, out of 134,732 such dwellings, 53,192, or 39.5 per cent., were owned by the occupier.

The reports of the Central Housing Board, under the chairmanship of Sir E. N. Thornton, K.B.E., Assistant Health Officer in the Department, are published separately, but the following table shows the main facts in regard to the working of the *Housing Act* since it became law.

TABLE N.—HOUSING ACT, NO. 35 OF 1920: WORKING FROM PROMULGATION  
 (16TH AUGUST, 1920) TO 30TH JUNE, 1923.

2. *Town Planning*.—Since the last report the Provincial Administrations have been sounded regarding their attitude on this important matter, with the following results :—

*Cape*.—Administrator some time back promised to introduce a Town Planning Ordinance. A draft has been prepared, and has been reported on by a special committee. General attitude of Administrator is that he would be agreeable to the matter being taken over by the Union Government under suitable conditions as regards co-operation with the Provinces.

*Transvaal*.—Local Government Commission, 1922, recommended institution of town planning organization for the Transvaal. Administrator doubts whether Province has the necessary legal powers. No funds available for the purpose at present. Would welcome Government taking over whole matter under suitable conditions.

*Orange Free State*.—Thinks matter adequately dealt with by existing Townships Laws and Municipal Regulations; no need for further action either by Government or Provincial Administration.

*Natal*.—Considers Provincial Administration not legally competent to deal with many of the matters involved, and urges that matter be dealt with by Union Government. Administrator emphasizes the urgency of the need.

The proposals submitted to the Government by this Department were that the scope of the Central Housing Board should be extended so as to make it a Housing and Town Planning Board for the Union; that for this purpose a whole-time expert town-planner should be added to the Board; that the Board's town-planning functions should be carried out through or in consultation with the Provincial Administrations and local authorities in much the same way as it at present carries out its housing functions—a procedure which has worked well and smoothly; and that pending the passing of a comprehensive *Town Planning Act* for the Union, immediate action be taken as regards new lay-outs under section 132 (1) (h) of the *Public Health Act*, on the lines of draft regulations submitted by the Town Planning Association of the Transvaal. It was estimated that the cost of such an organization would be about £3,000 per annum. Unfortunately, the Government was unable at the time to see its way to authorizing this additional expenditure, and in consequence nothing has up to the present been done.

The need for a suitable town-planning system in the Union is urgent, especially in the Cape Province and Natal, where in many places land is being cut up into small building lots and sold to Indians and others under lay-out plans which will inevitably result in slum conditions later on. A somewhat similar state of matters is developing in Shannon Valley, near Bloemfontein, and elsewhere, in connection with agricultural allotments. Several recently-developed centres of population in the Cape Province are striking illustrations of the need for a town-planning organization: mistakes have been and are being made which can never be remedied and which will be a perpetual handicap to posterity. The matter has an importance far beyond that of health. Broadly speaking, on a given piece of land laid out on modern town-planning lines—as compared with the old "gridiron" plan or no plan at all, except that of cutting up and selling the land to the sole advantage of the vendor—the same number of building sites can be obtained with double the amount of garden and open space, half the cost for road construction and maintenance, and half the cost for lighting, water supply, drainage, and sewerage. The average cost of road

maintenance in a busy town under modern conditions is about 2s. 6d. per square yard per annum, so that the burden on posterity from this item alone in badly-laid-out towns will be realized.

The Pinelands Garden City, Cape Town, was officially inaugurated and a commemoration stone laid by the Honourable the Prime Minister on 5th May, 1923. In his speech on that occasion, General Smuts referred to the urgent need for town-planning legislation. The whole question is at present being reconsidered by the Government.

3. *Nursing and Maternity Homes.*—The system of inspection and registration of these under the regulations which came into force on 1st April, 1921, has been continued. Where possible, the inspections have been carried out by the Medical Officer of Health of the local authority, but only whole-time Medical Officers of local authorities have been authorized to make such inspections. Owing to pressure of other work, it has not yet been possible to inspect all such homes in the Union, but the work is being pushed forward. The following table shows the position as at 30th June, 1923:—

TABLE O.—NURSING AND MATERNITY HOMES: NUMBERS AND INSPECTIONS UP TO 30TH JUNE, 1923.

Place.	Total Number.	Number Inspected.	
		By Medical Officer of Local Authority.	By Government Health Officer.
<i>Cape Province</i> —			
Cape Town.....	18	11	—
East London.....	9	9	—
Port Elizabeth.....	8	3	—
Elsewhere.....	29	—	13
<i>Natal Province</i> —			
Durban.....	25	22	3
Pietermaritzburg.....	3	3	—
Elsewhere.....	6	—	5
<i>Transvaal Province</i> —			
Witwatersrand.....	39	—	10*
Pretoria.....	4	2	—
Potchefstroom.....	4	—	4
Elsewhere.....	6	—	1
<i>Orange Free State Province</i> —			
Bloemfontein.....	3	—	—
Frankfort.....	5	—	—
Kroonstad.....	4	—	—
Elsewhere.....	3	—	—
UNION.....	166	50	36

The regulations and the system of inspection have had very beneficial effects; a number of homes, most of them of unsatisfactory type, closed down rather than come under the regulations. In a considerable number of other cases, improvements in construction or working have been effected in conjunction with the local authority. It is, however, regrettable that the powers conferred by the Act are so limited; much more could have been effected by a system under which every private nursing and maternity home would require to take out an annual licence, which would only be issued on satisfying the authority concerned that as regards construction, system of working, and in all other respects the home is satisfactory.

\* The remaining twenty-nine have since been inspected by the Medical Officer of Health, Johannesburg.  
—J. A. M. 14th October, 1923.

4. *Child Welfare*.—The following table shows, for each Province and for the Union, the births and deaths of white infants registered and the white infantile death-rate per 1,000 births for each of the years 1910-22:—

TABLE P.—WHITE CHILDREN: BIRTHS AND DEATHS REGISTERED AND DEATH-RATE PER 1,000 BIRTHS, 1910-22.

Year.	Cape.			Natal.			Orange Free State.			Transvaal.			Union.		
	Total White Births Registered.	Deaths of White Children Under One Year.	Death-rate per 1,000 Births.	Total White Births Registered.	Deaths of White Children Under One Year.	Death-rate per 1,000 Births.	Total White Births Registered.	Deaths of White Children Under One Year.	Death-rate per 1,000 Births.	Total White Births Registered.	Deaths of White Children Under One Year.	Death-rate per 1,000 Births.	Total White Births Registered.	Deaths of White Children Under One Year.	Death-rate per 1,000 Births.
1910	17,513	1,633	93.26	2,709	175	64.60	5,365	475	88.54	*15,240	*1,428	*93.66	*40,827	*3,711	*90.89
1911	17,889	1,737	97.13	2,746	226	82.30	5,093	466	91.50	15,472	1,534	99.15	41,200	3,963	96.19
1912	18,294	1,533	83.63	2,809	178	63.37	5,128	450	88.92	15,783	1,477	94.22	42,014	3,644	86.73
1913	17,989	1,739	96.60	2,806	190	67.36	5,386	460	85.41	15,957	1,427	89.43	42,138	3,816	90.55
1914	18,384	1,571	85.45	2,771	181	65.31	4,571	381	83.35	15,160	1,328	87.60	40,886	3,461	84.84
1915	17,745	1,535	86.50	2,832	186	66.03	4,882	428	87.67	15,012	1,343	89.46	40,471	3,492	86.31
1916	17,333	1,512	87.23	2,773	177	63.83	5,080	389	76.57	16,010	1,467	91.63	41,196	3,545	86.05
1917	17,521	1,436	81.96	2,756	171	62.05	4,959	353	71.18	15,486	1,309	84.53	40,722	3,269	80.27
1918	17,775	1,496	84.39	2,924	176	60.53	4,906	357	72.99	15,977	1,383	87.00	41,582	3,412	82.37
1919	16,749	1,351	80.66	2,910	191	65.63	4,727	382	80.81	15,338	1,326	86.38	39,724	3,250	81.81
1920	18,425	1,654	89.77	3,256	235	71.17	4,996	448	89.67	16,768	1,576	93.99	43,445	3,913	90.07
1921	18,259	1,382	82.21	3,367	203	65.93	5,279	379	71.60	16,347	1,374	90.84	43,252	3,338	82.92
1922	18,248	1,294	70.91	3,294	180	54.64	4,920	357	72.56	16,370	1,292	78.92	42,832	3,123	72.91

It will be seen that, except for a notable rise in 1920 affecting all the Provinces, the rate has been falling fairly steadily during the past twelve or thirteen years—from 90.89 in 1910 and 96.19 in 1911 to 72.91 in 1922, the lowest so far recorded. It will also be noted that the rate for Natal has been considerably and consistently lower than the rates for the other Provinces.

The whole position in the Union as regards this matter is far from satisfactory. There is no comprehensive and centralized organization. The Secretary for Education administers the *Children's Protection Acts*, grants to certified institutions and to destitute children made thereunder, and certain industrial schools; he has no medical or trained nursing staff, and no facilities or funds for dealing with the health aspects of the matter. The Department of the Interior has certain powers regarding mentally defective children. The Provincial Administrations, through their school medical inspectors, take certain action regarding the health of school children. The Department of Justice is interested in child welfare from the view-point of juvenile crime. The Minister of Public Health may, under section 135 of the *Public Health Act*, 1919, contribute towards costs incurred by local authorities or voluntary bodies in connection with child welfare, but no funds for such contributions have so far been voted. A few municipalities take a varying amount of interest and action in the matter; the great majority of local authorities do practically or literally nothing in connection with it. There are between thirty and forty child welfare and child life protection societies in the Union, but without any central organization, their only co-ordinating agency being an occasional conference. Experience in other countries shows that the white infantile death-rate in the Union could be reduced to between 40 and 50 per 1,000 births. In round figures, out of 43,000 white infants born annually in the Union, over

\* The Transvaal figures for 1910 are calculated from those for the eighteen months' period 1st July, 1909, to 31st December, 1910.

3,000 die within a year of birth, whereas this mortality could be reduced to 2,000 or less, entailing a saving of at least 1,000 infant lives annually. The saving would not be restricted to infants, but would continue throughout childhood, so that the total saved would be much greater than the number mentioned.

From every point of view this preventable wastage of life is deplorable. South Africa urgently needs more white population, and I know of no portion of the whole field of public health to which attention and funds could be so profitably devoted. New Zealand has unquestionably led the way in child welfare work, and has shown in striking fashion what can be accomplished. It has a director of child welfare who is a medical officer of the Government Health Department and covers the whole field in respect of infants and of children of pre-school and school age; a very comprehensive publicity and educative organization; a system of maternity and children's hospitals; and a Royal Society for the Health of Women and Children (better known as the Plunket Society), which controls an organization of "Plunket nurses" covering the whole country. Sixteen years ago, when the Plunket Society was founded and the Government organization inaugurated, the infantile death-rate of New Zealand per 1,000 was 80: in 1921 it was 47, and in 1922 it was only 41.8.

5. *Offensive Trades*.—This matter is, for the most part, dealt with by local authorities, but in Natal there is a large number of business concerns carrying on "offensive trades" in the rural areas under conditions which have often in the past given rise to public nuisance or danger to health from pollution of streams, etc. A large number of inspections of such premises has been carried out by the Department's health officers. A revised set of regulations, dealing with the establishment and carrying on of such trades and correlating the requirements under the *Public Health Act*, the *Natal Licensing Laws*, and the *Factories Act*, was framed and published in October, 1922.

6. *Opium and Habit-forming Drugs*.—It was pointed out in the last report that the existing laws and regulations regarding this matter were obsolete and inadequate in material respects, and especially in that they did not deal with habit-forming drugs other than opium. Pending the enactment of the *Medical, Dental, and Pharmacy Bill*, provision for dealing with the matter was made in section 10 of the *Customs and Excise Amendment Act*, No. 35 of 1922. A comprehensive series of regulations under that section was promulgated under Proclamation No. 181 of 7th November, 1922, applicable to all varieties of opium and opium compounds over a specified strength, and also to morphine, ecgonine, diamorphine or heroin, cocaine, and Indian hemp or dagga. The regulations, *inter alia*, prohibit the importation or exportation of these drugs except under permit issuable only to medical practitioners, dentists, chemists and druggists, and authorized veterinarians, and they prohibit their sale or use for other than medicinal or scientific purposes (the term "medicinal purposes" being defined as not including the use of the drug for the treatment of a habit or craving for that drug, or for any other habit-forming drug, except where so used in a Government or State-aided institution), or their sale by any person other than a chemist and druggist. They require registers to be kept showing all dealings in habit-forming drugs, give wide powers of enforcement to police, customs and health officers, and provide heavy penalties for contravention.

These regulations have since been stringently and actively enforced, and have been effective in greatly limiting or preventing the use of habit-forming drugs for improper and unauthorized purposes.

The following are the total quantities of habit-forming drugs authorized to be imported into the Union during the year 1923: Opium, 1,323½ lb.; morphine, 61½ lb., and 23,711 tubes of hypodermic tablets; heroin, 4 lb. 2 oz.; cocaine, 21½ lb.; *Cannabis indica*, 12 lb. (The regulations regarding *Cannabis*

*indica* and cocaine only came into force on 7th November, 1922.) The following table shows the prosecutions and convictions under the laws relating to habit-forming drugs during the year; the great majority of these refer to Indian hemp or "dagga":—

TABLE Q.—PROSECUTIONS AND CONVICTIONS UNDER LAWS RELATING TO HABIT-FORMING DRUGS DURING THE YEAR ENDED 30TH JUNE, 1923.

Province.	White.		Native.		Asiatic.		Other Coloured.		Total.	
	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.
Cape.....	108	51	202	182	15	11	602	577	927	821
Natal.....	1	—	189	180	28	25	2	2	220	207
Transvaal.....	14	13	706	675	75	59	72	59	867	806
Orange Free State	2	1	220	212	—	—	20	18	242	231
UNION.....	125	65	1,317	1,249	118	95	696	656	2,256	2,065

Seizures of habit-forming drugs made by the customs authorities during the year comprise 18½ lb. of opium, 45 tubes liquid opium, 55 lb. morphine, and 9 lb. of dried Indian hemp.

Shortly after the promulgation of the regulations, a certain chemist and druggist in Middelburg, Cape, applied for permission to dispose of 8,800 lb. of "dagga"; a general dealer at Jansenville applied for similar permission in respect of 9,400 lb.; three Indian dealers at Maritzburg submitted applications in respect of 856 lb.; another reported having "dagga" in stock to the value of £1,000. Several "dagga" farms of considerable extent were discovered in the Cape Peninsula and in the neighbourhood of Port Elizabeth. These facts and figures give some idea of the magnitude of the traffic in "dagga" and the need in the general public interest for its effective control and restriction.

Government Notice No. 585 of 1907 included in Division II of the Poisons Schedule to the *Medical, Dental, and Pharmacy Amendment Act*, No. 7 of 1899 (Cape) "Cannabis indica or Indian hemp, 'gunjah' or the African 'dagga' or the Cape wild 'dagga' and their preparations," and these plants were transferred to Division I of the same Schedule by Government Notice No. 1277 of 1917. The *Medical, Dental, and Pharmacy Bill*, as passed by the Senate in 1917, included in the Fifth Schedule (Habit-forming Drugs): "Indian hemp, including the whole or any portion of the plants *Cannabis indica* or *Cannabis sativa*, 'dagga,' 'wild dagga,' 'red dagga' or 'klip dagga,' and the whole or any portion of the plants *Leonotis leonurus* or *Leonotis ovata*."

Investigations by the Department and the collection of samples from various parts of the Union showed that the material commonly known in the Cape, Transvaal, and Orange Free State as "dagga," and in Natal and Zululand as "intsangu," was Indian hemp or *Cannabis indica*—the dried flowering tops of the plant *Cannabis sativa*. A few specimens obtained from natives or coloured people in the Cape Peninsula and south-western districts were *Leonotis*, but these were sold as "wild dagga" or "Cape dagga." It appeared from the inquiries that although the natives and coloured people sometimes smoke the Cape wild "dagga," they only do so when genuine "dagga" or Indian hemp is unobtainable, and it appeared doubtful from the information elicited whether "dagga" prepared from plants of the *Leonotis* species had any narcotic or habit-forming properties.

Dr. Marloth and Professor Gunn, Professor of Pharmacology at the Cape Town University, kindly undertook, at the request of this Department, to investigate the matter. Dr. Marloth subsequently reported that the alcoholic extract of *Leonotis* had no special toxic or narcotic properties ; that he had himself taken a dose of it corresponding to 10 grammes of the dried leaves without noticing any effect whatever ; that the dried herb, on being smoked, gives off a nauseous, volatile vapour derived from the ethereal oil in the leaves ; that similar fumes are given off by many other aromatic herbs, such as buchu, eucalyptus, and the common rhenoster bush ; and that he knew of no fact which would justify placing *Leonotis leonurus* on the list of habit-forming drugs. Professor Gunn, as the result of an independent investigation, reported that the active principle in *Leonotis* was apparently of a resinous nature and causes a certain amount of nausea and irritation of the stomach ; that the leaves and flowers have practically no, or only very slight, narcotic action ; that he had himself smoked a quantity of the leaves without effect ; that the symptoms noticed in tests on animals might either indicate a very weak narcotic action or be due to nausea from irritation of the stomach ; and that he had come to the conclusion that if *Leonotis leonurus* has any narcotic action at all, it is extremely slight.

As a result of these investigations, the item in the schedule of habit-forming drugs to the *Medical, Dental, and Pharmacy Bill* was amended in Select Committee of the House of Assembly to read : “ ‘ Dagga,’ ‘ intsangu,’ or Indian hemp : the whole or any portion of the plants *Cannabis indica* or *Cannabis sativa*, and any other plants or portions of plants sold or intended for sale as ‘ dagga ’ or ‘ intsangu ’ or Indian hemp.”

Plants of the *Leonotis* family grow wild all over the Union, and their removal from the list of habit-forming drugs greatly simplifies the problem. Indian hemp (*Cannabis*) does not grow wild in South Africa to any considerable extent ; it is sometimes so found about the sites of old native kraals or gardens, but the narcotic properties of “ dagga ” prepared from such plants are comparatively low. Genuine and potent “ dagga ” can only be prepared from Indian hemp plants grown under cultivation in a rich and manured soil in a warm locality. It is easily grown from ordinary bird-seed, which contains from 5 to 30 per cent. of hempseed, added mainly as a cheap diluent. It is said that hempseed is unusually rich in fats and heat-producing constituents, and that tropical birds, such as parrots, will not thrive in cold countries unless they get a certain amount of hempseed, but there is no reason to believe that in South Africa hempseed is a necessary constituent of bird-seed. After ample notice to importers and dealers, the importation, keeping, or sale of hempseed, or bird-seed containing hempseed, was prohibited under the regulations regarding habit-forming drugs.

7. *Traffic in Methylated Spirits for Drinking Purposes.*—Representations to the Government regarding this matter were made by the Black Peril Commission of 1913, the Kimberley Licensed Victuallers’ Association in 1914, the Cape Municipal Congress in 1921 and 1922, and the Cape Divisional Councils’ Congress in 1922. At the instance of this Department, the matter was investigated and reported on by the police and customs authorities in the latter part of 1922. On the instruction of the Minister of Public Health, an inter-Departmental Conference—consisting of myself as chairman, the Acting Commissioner (South African Police), the Commissioner of Customs and Excise, and the Government Analyst (Johannesburg)—sat in Pretoria on 3rd January, 1923, to consider the results of the inquiries and to formulate recommendations. The Conference found that the use of methylated spirits for drinking purposes is seriously prevalent and is increasing in the Port Elizabeth area, Cape Peninsula, and in Durban and Pietermaritzburg ; that the chief causes of this increase

are the high price of brandy and other liquors, the more effective enforcement of the liquor laws, and the inefficiency of the restrictions and safeguards against the drinking of methylated spirits ; that the classes chiefly affected are coloured and low-class European degenerates or dipsomaniacs ; and that the "faker" of liquor—often a Chinaman—who produces brandy or "pontac" from a few pence worth of methylated spirits, with sugar, water, and colouring matter, plays an important part in the traffic.

The Conference recommended the passing of special legislation, uniform for the whole Union, dealing with the keeping, conveyance, and sale of methylated spirits ; that the drinking, or the keeping or selling for drinking, of methylated spirits be made a punishable offence ; that no person be allowed to keep, convey, or sell methylated spirits unless specially licensed therefor ; that manufacturers, methylators, and wholesale dealers be prohibited from selling methylated spirits to unlicensed persons ; that the sale of methylated spirits to Asiatics, coloured persons, or natives be prohibited except on a permit signed by a magistrate or other responsible Government official ; and that licensees be required to keep a register showing details of all transactions in methylated spirits. The Government was unable to deal with the matter during last session of Parliament.

8. *Poisoning by "Stinkblaar" or Thorn Apple* (*Datura stramonium* and *Datura tatula*).—In February last two "outbreaks" occurred in the Somerset East District. The local police reported that the inmates of a certain hut in the location "had suddenly gone mad." The District Surgeon found some nine or ten natives affected, also a dog belonging to the hut. The patients were wildly excited, with staring eyes, dilated pupils, and an expression of great anxiety or fright. They talked incessantly, jabbering in an incoherent manner. Some had nausea or vomiting. The intense excitement subsided within a few hours, leaving the patients quiet and rational, but very weak and tremulous. During the same night a similar outbreak was reported by a neighbouring farmer, who stated that the natives were "running about the farm in an uncontrollable manner." The District Surgeon, after investigation, attributed both outbreaks to the eating of bread and "pap" prepared from a particular sample of Boer meal made from corn ground on a certain farm in the district. Samples of this meal were sent to the Government Chemical Laboratory and found to contain the seeds of the "stinkblaar" or thorn apple. Some years ago a similar outbreak at Vrede, Orange Free State, was found to be due to the same cause. The ordinary "stinkblaar" (*Datura stramonium*) and also the "blaauw stinkblaar" (*Datura tatula*) are common in many parts of the Union, and contain the poisonous alkaloid, hyoscyamine. Warning notices were published in the Press urging farmers, millers, and all concerned to destroy these poisonous plants, and to ensure that their seeds are not present in grain, meal, or flour intended to be used for food.

9. *Botulism and Other Forms of "Food Poisoning."*—World-wide attention was called to an "outbreak" of botulism at Loch Maree, in Scotland, in August last, involving eight deaths. The cause was proved to be a particular pot of wild-duck paste, prepared by a well-known firm, which was found to be highly infected with the *bacillus botulinus*. Some of this paste was found to be "of such terrible toxicity that a portion the size of a pin's head would have been sufficient to kill 2,000 mice." Exhaustive investigation by the Scottish Board of Health showed that the *bacillus botulinus* is widely distributed in nature, mainly as a soil organism ; that the prevention of botulism in preserved foods is a question of efficient sterilization ; that tin containers for preserved foods are preferable to glass ones ; and that the most effective remedy in botulism

poisoning is an anti-serum prepared from immunized horses. A supply of this serum has been obtained by the South African Institute for Medical Research, Johannesburg.

Cases of poisoning by tinned foods are not frequent, and it would be easy to exaggerate the danger. During the Great War, in which huge armies lived for lengthy periods mainly on tinned foods, ill-effects were exceedingly rare. Occasional cases do, however, occur. In October last a European lady and little girl at East London became severely ill and died within two or three hours after eating tinned sild. A similar, but non-fatal, case occurred in a European gentleman at Bloemfontein in December. In both instances the sild or "sardines" were of the same brand, packed by a firm in Trondhjem, Norway.

~~10.~~ 10. *Ankylostomiasis or Hookworm Disease*.—This disease was first discovered in South Africa in 1896 in native labourers on one of the De Beers' Mines, Kimberley. In 1905 the parasite was identified in the faeces of a coolie from India, employed on a sugar estate at Tongaat, Natal. Following on this discovery, investigations showed that the disease was seriously prevalent among the imported indentured Indians on the sugar estates along the coastal belt of Natal and Zululand, and was causing considerable mortality among them; that a high percentage (85 per cent. in the case of several shiploads) of coolies brought to Natal by the Indian Immigration Board harboured the parasite on arrival; and that an appreciable proportion of South African natives working, or who had been working, on the sugar estates in contact with Indians had contracted the infection.

Energetic steps to deal with the disease were promptly taken by the Natal Health Department and the Indian immigration authorities. Measures were instituted to prevent the further inflow of infection by excluding or treating infected coolies arriving from India, and to determine the extent of the infection in coolies and natives on the sugar estates and elsewhere. Arrangements were made for effectively treating all known cases. Special forms of latrine were devised and their use enforced in infected localities, and other measures were taken to prevent spread and to eradicate the disease. The story of this campaign constitutes one of the most striking chapters in the sanitary history of South Africa. Within a few years the prevalence of the disease had been greatly reduced and the mortality practically ended. With the continued improvement of sanitary conditions on the sugar estates and the discontinuance of the importation of indentured Indians, the disease, if not entirely non-existent, is now relatively unimportant in Natal and Zululand.

In 1906 it was found that a large percentage of native labourers on the mines of the Witwatersrand—imported from Mozambique, Nyasaland, and British Central Africa—harboured the hookworm. Investigation showed that the cases had been infected before arrival on the Rand, and that owing to the acid waters on most of the gold mines and the dryness of others, the infection had very little tendency to spread. The risks have since been further reduced by systematic search for and treatment of cases and the improvement of mine sanitation.

With the exceptions mentioned, the Union is in the happy position of being practically free from this disease.

11. *Cancer*.—The Department has during the year kept in touch with the research work which is being done in Europe and America regarding cancer and other forms of malignant disease, and in reply to a questionnaire circulated by the Office International d'Hygiène Publique, furnished certain statistics and information regarding cancer in the Union, including the following table kindly prepared by the Director of Census and Statistics:—

TABLE R.—CERTIFIED DEATHS FROM CANCER IN EUROPEANS, SHOWING THE SEAT OF THE LESION, 1913–21.

Seat.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Mouth.....	50	36	35	42	55	46	56	40	50
Stomach and liver.....	256	252	291	284	310	329	318	355	351
Peritoneum, intestines, rectum.....	46	52	76	65	65	65	69	99	106
Female genital organs.....	62	72	88	91	96	82	105	94	115
Breast.....	63	36	65	46	59	55	49	61	58
Skin.....	17	21	16	14	19	19	20	35	38
Other organs.....	128	156	146	130	168	168	194	200	198
<b>TOTAL.....</b>	<b>622</b>	<b>625</b>	<b>717</b>	<b>672</b>	<b>772</b>	<b>764</b>	<b>811</b>	<b>884</b>	<b>916</b>

It will be noted that during the nine-year period the number of certified deaths from cancer in Europeans increased by nearly 50 per cent. ; this notable increase, even after making allowance for better diagnosis and certification and for the increase of population during the period, certainly calls for investigation. In regard to this disease South Africa presents a very promising field for research. Amongst the European population the incidence of the disease approximates to that in European countries, allowance being made for the age and sex distribution of the population. In regard to the natives, however, the position is very different.

Amongst natives living under natural and primitive conditions, cancer is very rare. Medical men who have for many years had large native practices in the Transkei or Zululand report that they have only seen two or three, or perhaps up to half a dozen, cases in natives. Amongst the natives in the towns and natives who have largely adopted European diet, clothing, and mode of life, the disease is much more frequent, the frequency apparently varying directly with the degree of what may be called the "Europeanization" of the natives. These facts are very suggestive, and their investigation might throw useful light on the causes of cancer prevalence. Up to the present, however, no systematic investigation of the matter has been undertaken.

12. *Vaccines, Sera, Pathogenic Cultures, etc.*—Under the regulations made under sections 36 (t) and 134 of the Public Health Act, 1919 (Government Notice No. 2306 of 21st December, 1920), 34 permits were issued during the year, of which 7 were for importations of smallpox vaccines or calf lymph, 3 for anthrax vaccine for veterinary purposes, 1 for plague cultures, and 1 for a guinea-pig inoculated with *trypanosoma gambiense* (sleeping sickness) from the Belgian Congo. Two applications for permits to import smallpox vaccine or calf lymph were held over pending the production of certificates by competent veterinary surgeons in respect of the calves used in the production of the vaccine ; one application for a permit to import sera for dogs' diseases was held over pending testing and examination of the sera by the Director of Veterinary Research ; and one application by a lecturer in domestic science at a University College for a permit to import cultures of *bacillus typhosus* was refused.

13. *Exclusion of Children from School on Account of Infectious Diseases.*—Reference was made in the last report to a series of regulations published in June, 1922, regarding the closure of schools on account of infectious diseases. In March, 1923, after consultation with the Society of Public Health and Education Medical Officers, the Medical Officers of Health of several of the large

municipalities and the four Provincial Administrations, a supplementary series of regulations were promulgated to be in force throughout the Union, dealing with the exclusion of children from school on account of infectious disease, the duties of principals of schools and of parents or guardians, and the powers and duties of medical officers of health in connection with this matter. The regulations were accompanied by a schedule giving specific directions and periods of exclusion. Previous regulations on the subject differed for each Province, and in some cases for each local authority ; in other places, there were no regulations dealing with the matter at all. The new regulations constitute a comprehensive code uniform for the Union ; they appear to be working very satisfactorily.

14. *Medical, Dental, and Pharmacy Matters.*—In December, 1922, the first final examination for medical degrees held in South Africa took place at Cape Town. Two students passed, and were the first to receive the medical degrees of the University of Cape Town.

The following table shows the number of medical, dental, and pharmacy students at Universities and Colleges of the Union during the half-year ended 30th June, 1923 :—

TABLE S.—MEDICAL, DENTAL, AND PHARMACY STUDENTS AT UNIVERSITIES AND COLLEGES IN THE UNION DURING THE HALF-YEAR ENDED 30TH JUNE, 1923.

Subject.	University of			Rhodes University College.	Grey University College.	Transvaal University College.	Natal University College.	Total.
	*Cape Town.	Stellenbosch.	Witwatersrand.					
<b>Medical—</b>								
1st Year...M.	50	1	57	2	2	7	2	121
F.	1	—	4	—	—	—	1	6
2nd „ „ M.	68	—	40	—	—	—	—	108
F.	5	—	6	—	—	—	—	11
3rd „ „ M.	37	—	28	—	—	—	—	65
F.	4	—	6	—	—	—	—	10
4th „ „ M.	19	—	26	—	—	—	—	45
F.	—	—	—	—	—	—	—	—
5th „ „ M.	21	—	13	—	—	—	—	34
F.	3	—	4	—	—	—	—	7
6th „ „ M.	11	—	—	—	—	—	—	11
F.	1	—	—	—	—	—	—	1
Public Health Diploma.....	4†	—	—	—	—	—	—	4
Dentistry.....	11	—	22	4	4	2	—	43
Pharmacy....M.	8	—	—	—	5	—	2	15
F.	—	—	1	—	1	—	—	2

At the Cape Town University degree examinations in June, 1923, one candidate passed Part II of the examination for the Diploma in Public Health.

As already mentioned, the consolidating and amending *Medical, Dental, and Pharmacy Bill* passed second reading in the House of Assembly, and was reported on by a Select Committee ; the Minister of Public Health hopes to take up the Bill at that stage next Session. Several new and amending regulations under the existing laws were promulgated during the year.

\* In addition, there were some sixty students at the University of Cape Town taking the course for the B.A. degree, which includes all the subjects in the 1st and 2nd years of medical study, with a view ultimately of qualifying for medical degrees.

† Part I, 2 ; Part II, 2.

The following disciplinary cases were dealt with during the year by the bodies mentioned :—

*Colonial Medical Council :*

Medical practitioner found guilty of infamous and disgraceful conduct (abortion) ; name erased from the Register (Government Notice No. 657 of 17th April, 1923).

*Colonial Pharmacy Board :*

Chemist and druggist found guilty of infamous and disgraceful conduct (abortion) ; name erased from the Register (Government Notice No. 1655 of 6th October, 1922 ; name had previously been erased from Transvaal Register for the same offence, Government Notice No. 612 of 10th April, 1922).

Chemist and druggist found guilty of infamous and disgraceful conduct (in connection with sales of Indian hemp or "dagga") ; reprimanded and cautioned.

Two chemists and druggists found guilty of improper and unprofessional conduct (divulging contents of prescriptions without consent of patients concerned) ; cautioned.

15. *Military Hospitals and Medical Services.*—The linking-up with the Health Department of Military Hospitals and Medical Services, and Military Pensions Medical work, under an Assistant Health Officer who acts as Director of Medical Services for the Defence Department, has worked satisfactorily, and has proved advantageous in many ways to both the Departments mentioned and to the Treasury.

The military hospitals have been efficiently and economically administered during the year, the average daily cost per patient being approximately 9s  $3\frac{1}{2}$ d., inclusive of medical attendance. The following table shows the number of patients under treatment at the beginning and end of the period covered by the report :—

TABLE T.—NUMBER OF MILITARY CASES, INCLUDING EX-SOLDIERS, UNDER TREATMENT IN HOSPITAL AS AT 1ST JULY, 1922, AND 1ST JULY, 1923.

Institutions.	1st July, 1922.			1st July, 1923.		
	Serving Soldiers.	Ex-Soldiers.	Total.	Serving Soldiers.	Ex-Soldiers.	Total.
Military hospitals.	90	166	256	73	161	234
Civil hospitals....	6	142	148	4	104	108
TOTAL....	96	308	404	77	265	342

Included in the figures for serving soldiers as at 1st July, 1922, are 24 members of the South African Police, who are now admitted to the military hospitals for observation and treatment in cases of difficulty or doubt, or where a saving on the cost of treatment can be effected as compared with the cost in civil hospitals. During the year the total admissions of members of Government Forces and ex-soldiers to military hospitals was 1,847 ; discharges, 1,839 ; and

deaths in hospital, 31. The following table shows the average daily number of patients treated in military hospitals and the diseases from which they suffered :—

TABLE U.—DAILY AVERAGE NUMBER OF CASES TREATED IN MILITARY HOSPITALS,  
YEAR ENDED 30TH JUNE, 1923.

Disease.	Members of Government Forces.	Ex-Soldiers.	Total.
Malaria.....	0·5	59·6	51·1*
Venereal disease.....	6·2	—	6·2
Influenza.....	1·6	—	1·6
Wounds.....	9·1	22·7	31·8
Shell-shock.....	—	—	—
Other injuries.....	13·0	5·0	18·0
Dysentery.....	0·2	5·2	5·4
Enteric.....	0·5	—	0·5
Tuberculosis.....	0·7	38·4	39·1
Other causes.....	40·4	52·2	92·6
 TOTAL DAILY AVERAGE.....	 72·2	 174·1	 246·3

A large number of ex-soldiers suffering from chronic malaria were admitted during the year and given a course of injections and intensive treatment, with good results.

16. *Central Medical and Veterinary Stores.*—During the year arrangements were completed under which all Government hospitals and similar institutions will be supplied with drugs, dressings, and appliances from or through the Central Medical and Veterinary Stores, which are under the immediate administration of the Director of Medical Services (Defence). This system has many advantages and is working well. Except in the case of emergency orders, all importations required are included in half-yearly indents, and as far as possible the drugs, dressings, and appliances are sent direct to the institutions at which they are required. In this way the advantage of bulk purchases is secured, whilst transport, clerical, and other expenses are minimized. A saving of about £5,000 has already resulted. The system has the further advantage of rendering it possible periodically to turn over or renew the considerable stocks of drugs and dressings which must necessarily be held by the Defence Department. All requisitions for drugs by institutions are subjected to scrutiny by the Director of Medical Services, and the indents are framed with a view to encouraging competition amongst manufacturers and wholesale firms; considerable savings have been effected by stopping the importation of dilute acids and similar substances, and also by purchasing locally where this is more economical.

17. *Military Pensions Medical Work.*—During the year, 301 Appeal Medical Boards were held. In 63 cases the appeals were allowed, and the assessments raised; in 222 the appeals were disallowed, and the assessments confirmed; and in 16 the appeals were disallowed, and the assessments reduced. In addition, 268 special Medical Boards were held in cases where the advice of specialists or other officers was desired in addition to that furnished by the regular Pensions Medical Officers. During the year the work of reviewing the

\* Compared with 48·9 in previous year.

Anglo-Boer War pensions and of bringing the assessments into line with those of the Great War was undertaken by the Pensions staff, and the Medical Officers are still busily engaged on this work in addition to their ordinary duties.

On the 30th June, 1923, the special Pensions Medical Staff numbered eight whole-time and three part-time medical officers.

18. *Artificial Limb Factory.*—This factory was working at full pressure throughout the year. It carried out or manufactured the following:—Repairs to artificial limbs, boots, and appliances, 661; new limbs, 93; new surgical boots, 200 pairs; new surgical apparatus other than limbs or boots, 88.

The work of the factory continues to give general satisfaction. The cost to Government has been approximately £7,848, inclusive of all overhead charges.

The average cost of a below-knee limb made in the factory is £18. 16s., and of an above-knee limb £24. 10s., or of all limbs, £22. 4s. These prices are much below what similar limbs could be imported for. The Director of Medical Services considers that the limbs and appliances made at the factory are of better quality than those furnished to ex-soldiers in Great Britain, and estimates the present market value of the output of the factory at £15,000 per annum.





